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Sixth annual progress report of the Board of Auditors on the implementation of the United Nations enterprise resource planning system

Note by the Secretary-General

The Secretary-General has the honour to transmit to the General Assembly a letter dated 30 June 2017 from the Chair of the Board of Auditors transmitting the report of the Board on the progress in the implementation of the enterprise resource planning system (Umoja).

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Letter of transmittal

Letter dated 30 June 2017 from the Chair of the Board of Auditors addressed to the President of the General Assembly

I have the honour to transmit to you the sixth report of the Board of Auditors on the implementation of the enterprise resource planning system.

(*Signed*) Shashi Kant **Sharma**
Comptroller and Auditor General of India
Chair of the Board of Auditors
(Lead Auditor)

Enterprise resource planning system (Umoja): key facts

Cost

$466.2 million	Approved budget to end of 2017
$411.8 million	Expenditure to 31 December 2016

Timeline

December 2008	General Assembly approves project proposal
November 2013	Deployment of Umoja Foundation to peacekeeping operations
March 2014	Deployment of Umoja Foundation to 17 special political missions
June and November 2015	Deployment of Umoja Integration (Foundation and Extension 1) across United Nations Secretariat
July 2016	Deployment of service delivery to special political and peacekeeping missions
November 2016	Deployment of cluster 5
December 2018	Forecast date for full implementation

Sixth annual progress report of the Board of Auditors on the implementation of the United Nations enterprise resource planning system

Summary

1. In July 2006, by its resolution 60/283, the General Assembly endorsed the Secretary-General's proposal to implement an enterprise resource planning system (Umoja) across the United Nations Secretariat to replace ageing legacy systems such as the Integrated Management Information System (IMIS). Umoja is central to the modernization of the business administration of the United Nations. The complex, high-value project is aimed at modernizing a wide range of business processes and systems that are crucial to the efficient and effective management of the Organization.

2. In December 2011, in its resolution 66/246, the General Assembly requested the Advisory Committee on Administrative and Budgetary Questions to request the Board of Auditors to conduct a comprehensive audit of the implementation of the Umoja project and to report annually to the Assembly starting at the main part of its sixty-seventh session.

3. In a series of reports since 2012 (A/67/164, A/68/151, A/69/158, A/70/158 and A/71/180), the Board of Auditors has submitted information on the progress made in the implementation of the Umoja project. The original timeline and budget approved in 2008 envisaged deploying Umoja by the end of 2012 at a cost of $248.3 million. However, the implementation plans have been substantially revised on several occasions, and the deployment of full functionality is at present not expected until 2018. The current approved budget for the project up to the end of 2017 is $466.2 million, and the total expenditure up to 31 December 2016 is $411.8 million.

4. Umoja is being implemented in different parts of the Organization (clusters), with functionality split into three phases:

(a) **Foundation**. This functionality, mainly finance and procurement processes, was fully deployed across peacekeeping operations from November 2013, in special political missions from March 2014 and across remaining United Nations Secretariat entities in two clusters from June and November 2015.

(b) **Extension 1**. Comprising mainly payroll and human resources management processes, including travel, this functionality was deployed across Secretariat entities and peacekeeping operations in two clusters from June and November 2015. Most non-peacekeeping Secretariat entities therefore received Umoja Foundation and Extension 1 functionality at the same time (known as "Umoja Integration").

(c) **Extension 2**. This functionality will include key business processes such as: budget formulation; force planning and programme management; supply chain management; and conference and event management, and is currently scheduled to be deployed by the end of 2018. A significant portion of financial benefits from Umoja is expected to accrue from the deployment of Extension 2.

5. This is the Board's sixth annual review of progress of the implementation of Umoja. It covers: progress in deploying the Umoja solution; stabilizing the Umoja solution; mainstreaming the Umoja solution; the costs and benefits of Umoja; and functionalities in Umoja.

Key findings

Deploying the Umoja solution

6. Umoja Integration (Foundation and Extension 1 functionality) has been deployed to five clusters with more than 40,000 users, operating from more than 400 locations. Cluster 5 was deployed in November 2016 in accordance with the schedule approved by the Umoja Steering Committee in June 2016 and was reported to the General Assembly during the main part of its seventy-first session. In 2015, cluster 5 had been anticipated to be deployed in April 2016, but its deployment was postponed to September 2016 to enable continued stabilization support for clusters 3 and 4. The Administration stated that the delay in deployment of cluster 5 had a minimal impact on the timelines for the deployment and the cost implications for the remaining Umoja functionality, since most of the Extension 2 functionality was independent of the cluster 5 deployment activities.

7. As stated in the eighth progress report of the Secretary-General (A/71/390), the Administration plans to deploy the remaining functionality of Umoja by December 2018. The Advisory Committee, in its eighth progress report (A/71/628, para. 9), stated that it welcomed the progress reported by the Secretary-General in the deployment of Umoja Foundation and Extension 1 and considered the Secretariat-wide implementation of Umoja to be a major achievement. The Advisory Committee also stated that the deployment of Umoja Foundation and Extension 1 had provided a sense of confidence that the full scope of the project as approved by the General Assembly in its resolution 63/262 could be delivered. The Administration has also deployed a part of the International Civil Service Commission (ICSC) changes and plans to decommission the Galileo legacy system for the inventory management of peacekeeping missions by September 2017.

8. The Administration indicated that 35,596 of the 40,694 Umoja users had been trained, of whom 32,240 had received training in multiple courses, implying that 12 per cent of the total Umoja users had not received any training. In the online user satisfaction survey conducted by the Board, 15 per cent of the respondents reported that they were very confident and 69 per cent somewhat confident of using Umoja, and 10 per cent of the respondents reported that they considered themselves fully ready and 66 per cent somewhat or mostly ready at the time of the implementation of Umoja. It was also seen that 46 per cent of the respondents felt that the timing of training had been just right, while 54 per cent felt either that there had not been enough time after training or that the training had been carried out too early before deployment. In addition, 44 per cent of the respondents said that they had received training but could not understand Umoja, while 56 per cent felt that they had been adequately trained.

Stabilizing the Umoja solution

9. Problems surfaced in different areas during the cluster 4 stabilization phase, especially in the transition between budget periods. The Umoja post-implementation review task force, chaired by the Controller, had been revived to ensure the speedy resolution of the issues reported by cluster 3 and 4 entities. Those issues were harmonized into a set of 67 recommendations, and, on the basis of the information received from the Umoja team as at February 2017, 13 recommendations were still in the process of implementation. The Administration stated that the recommendations that had not yet been implemented would be incorporated into a new continuous improvement model by which the Umoja solution would be technically upgraded and improved as needed.

10. The stabilization of business reporting was another issue that required attention. Umoja currently provides 172 standard corporate formatted and ad hoc reports, and "power users" have produced 2,753 reports in the platform. A phased transition of the responsibilities of business intelligence reporting from the Umoja project to the Office of Information and Communications Technology began in 2016 as part of the mainstreaming of project functions. By conducting a series of bilateral workshops with each entity to identify and develop key additional reports, the Office had identified a requirement of more than 700 reports and would concentrate its efforts on coordinating the development of the top 10 most required business intelligence reports for each process owner's area. The Administration has reviewed supply governance, is continuing to improve processes and engage the business community and is developing dashboards for the strategic management of resources and operations.

11. The Administration engaged an external consultant to carry out an assurance project to identify and analyse the areas of risk that might affect the immediate and long-term value of Umoja to the Organization. The Board observed that the consultant had identified, in 2015, the operating model risks, the impact of the risks and the mitigating actions and had indicated that the benefits of Umoja would not be realized unless those risks were addressed. However, action on the recommendations of the consultant's study was still pending. The Administration stated that many of the identified risks had been addressed and that a systematic review would be undertaken and addressed in the next progress report. It also stated that the findings of the consultant's study had been discussed with the process owners and would be reviewed and implemented wherever deemed beneficial.

12. The Board noted that only the purchase orders that were open on the date of migration had been migrated to Umoja from the legacy systems and that the previous years' data (closed purchase orders) had not been migrated. Likewise, only the final values had been migrated to Umoja, but not historical data. Although assurances had been received from business owners regarding the valuation of inventory at the time of migration, the Board noted no independent oversight of the data cleansing and enrichment process on the part of the business units.

Umoja costs

13. The total cost of ownership is the sum of the direct and indirect costs. The latter are composed of the people time (hours) of departments and entities for Umoja deployment and support, including legacy data cleansing and enrichment and training. The cost of development (capital expenditure) of Umoja is borne under the Umoja project, while maintenance and support costs (revenue expenditure) are borne by the Office of Information and Communications Technology. The Umoja project team has not yet assessed the exact total cost of ownership and stated that, while the direct costs could be easily quantified, the quantification of the indirect costs had been challenging, as time sheets were not maintained for staff of the United Nations Secretariat. The team was attempting to estimate that cost retroactively for periods prior to 2016 on the basis of reasonable assumptions to support the information in the progress report to be submitted to the General Assembly in September 2017.

Benefits of Umoja

14. The Board observed that, owing to implementation challenges, the process of benefit realization had been given lower priority before 2016 and that, until the budget for the 2016-2017 biennium, a top-down approach had been adopted, according to which the heads of departments had quantified benefits on the basis of the overall savings to be made. The Administration stated that, from the budget for

the biennium 2018-2019, a bottom-up approach with the involvement of the business process owners had been adopted, involving a review of the areas of the original benefits cases as to their continuing validity and applicability and the quantification of the projected benefits in the updated business case from process owners in the fields of human resources, central support services, finance, logistics and supply chain, and information technology. It added that the budget for 2018-2019 to be presented to the General Assembly would be based on those projections. The Board noted that the bottom-up approach was an improvement on the previous top-down approach.

Functionalities in Umoja

15. The Board notes opportunities for incorporating additional functionalities into Umoja in the areas of inventory valuation and e-tendering of procurement.

Overall conclusion

16. The implementation of Umoja Integration globally across more than 40,000 staff in 400 locations is a significant achievement, given the project's complexity and difficult start. In its fifth report (A/71/180), the Board, while recognizing that it was common for problems to arise in the implementation of major enterprise resource planning systems, determined that the decision to prioritize adherence to the deployment schedule above the need to ensure organizational readiness had increased the scale of the problems encountered. Umoja Foundation and Extension 1 have since been deployed.

17. Umoja remains central to the successful reform and modernization of the administration of the United Nations and has the potential to generate major benefits for the Organization and for Member States. It is not feasible to return to using legacy systems such as IMIS, and business units must continue to take full ownership of Umoja and work closely and constructively with process owners and the Umoja project team to resolve the problems identified by the Board in the context of its current review and make the improvements necessary to optimize the solution.

18. The risks affecting the immediate and long-term value of Umoja to the Organization identified by the consultant need to be addressed in a timely manner to ensure the realization of the benefits envisaged from Umoja. There is a need to assess the total cost of ownership of Umoja, including both the direct and the indirect costs, and to take steps to account for the costs incurred in training in terms of staff time and travel in the calculation thereof. Benefit realization needs to be refined by reviewing the areas of the original benefits cases as to their continuing validity and applicability, which are dependent on the process/activity time that can be measured in Umoja over time.

Recommendations

19. The Board has made recommendations throughout the report. The main recommendations are as follows:

(a) **Mandatory training should be provided to all users before the deployment of any functionality. The feedback received should be taken into account when designing the curriculum;**

(b) **A comprehensive plan for the configuration of business intelligence reporting should be prepared in consultation with the users of reports, with the objective of incorporating frequently used reports into the standard corporate reports;**

(c) **The Administration take appropriate mitigating action to manage the risks identified in the assurance project and present the status of the implementation thereof in the next progress report to the General Assembly;**

(d) **The Administration consider implementing time sheets for tasks relating to the implementation of Umoja to fully capture the indirect costs and take steps to account for the costs incurred in training in terms of staff time and travel in the calculation of the total cost of ownership of Umoja;**

(e) **The figures in the updates to the benefit realization plan to be submitted to the General Assembly in respect of the decrease in process/activity time be calculated on the basis of time stamp figures where such figures are available in Umoja;**

(f) **The updated benefit realization plan, after approval by the General Assembly, be frozen to serve as the baseline for the monitoring of the future benefit realization that will arise from the use of Umoja.**

Follow-up of previous recommendations

20. Since the Board first audited the Umoja project in 2012, it has made a total of 43 recommendations. Of the 18 pending recommendations from the Board's previous reports, all of which were accepted by the Administration, 4 have been fully implemented, 12 are under implementation and 2 have not been implemented.

21. A more detailed commentary on the individual recommendations, together with details of the action taken by the Administration, is included in annex I.

I. Background

1. Umoja is an ambitious enterprise resource planning system that is aimed at modernizing a wide range of business processes spanning the United Nations administrative and support functions and systems that are essential to the efficient and effective functioning of the Organization. It is being used across the entire Secretariat, which includes United Nations Headquarters, offices away from Headquarters, International Tribunals and funds and programmes of the United Nations, which have many different business models and funding and accountability structures. The project proposal was approved by the General Assembly in December 2008, in its resolution 63/262. The high-level aims of Umoja set out in the first progress report of the Secretary-General (A/64/380) included:

(a) To support management reform and accountability;

(b) To improve the direction of resources;

(c) To achieve more efficient and effective working practices through improved systems and processes.

2. The approved project budget up to the end of 2017 is $466.2 million. As at 31 December 2016, the Administration had spent $411.9 million, excluding amounts absorbed by the business units in preparing for the deployment of Umoja. The Administration expects to complete the deployment of Umoja by the end of 2018.

A. Deployment strategy

3. The Administration originally planned to deploy Umoja across the Secretariat in two phases by the end of 2012. Those plans were significantly revised, and current deployment plans are based on a phased implementation of parcels of functionality across groups of United Nations entities known as clusters. The first two clusters (peacekeeping operations and special political missions) were implemented in 2013 and 2014, respectively. Cluster 3 was deployed in June 2015, followed closely by cluster 4 in November 2015, involving the remaining Secretariat entities. Cluster 5, related to national staff payroll in peacekeeping operations and special political missions, was deployed in November 2016.

4. The Umoja business processes to be implemented have been grouped together into three main functional groupings known as Foundation, Extension 1 and Extension 2, which comprise:

(a) Foundation: finance processes (funds management and financial accounting), supply chain, project management, and sales and distribution. Umoja Foundation is essential to supporting International Public Sector Accounting Standards (IPSAS) requirements;

(b) Extension 1: human resources management processes, such as organizational and position management, personnel administration, entitlements, benefits and time management. Payroll, travel initiation, travel expenses and online booking are also included in this phase;

(c) Extension 2: other important administrative processes such as budget formulation, force planning, programme management, supply chain planning, warehouse management, conference and event management, full grants management and commercial activities.

The deployment of Umoja Foundation and Extension 1 across clusters 1 to 5 and the planned deployment of Umoja Extension 2 in 2016-2018 are presented in annexes II and III, respectively.

B. Previous comments by the Board and scope of the report

5. In its resolution 66/246, the General Assembly requested that the Board provide annual progress reports on the implementation of the enterprise resource planning project. In its first report (A/67/164), the Board highlighted that it could provide no assurance that the project would be delivered to time and budget and noted that many of the problems pointed to weak project governance and management, as well as to wider and deeper weaknesses in United Nations governance and management of business transformation.

6. By the time of the second progress report (A/68/151), the project was on a sounder footing but the implementation challenges were about to escalate, with the project moving into a phased, multi-site implementation process. In particular, the Board noted systemic issues, including the Organization's limited ability to manage change and the ambitious planning assumptions for the project.

7. In its third report (A/69/158), the Board reviewed the progress made by the Administration in deploying Umoja within the Department of Field Support, drew attention to the need to introduce change to the United Nations in a more effective, planned manner and highlighted that achieving business readiness for Umoja had to be a collective responsibility.

8. In its fourth report (A/70/158), the Board identified that, in order to achieve the aggressive implementation timetable for clusters 3 and 4, some key project activities had been curtailed. They included testing routines and data conversion exercises. The weaknesses in preparing staff for the changes that Umoja would introduce and gaps in post-implementation support arrangements were identified as further risks to the implementation strategy, and the Administration had not developed adequate contingency plans to mitigate the known risks. The Board identified that significant challenges had been encountered with previous deployments of Umoja owing to a lack of organizational readiness, and there was a high risk that similar problems would emerge in 2015.

9. In its fifth report (A/71/180), the Board, while acknowledging that it was common for problems to arise in the implementation of major enterprise resource planning systems, determined that the decision to prioritize adherence to the deployment schedule above the need to ensure organizational readiness had increased the scale of the problems encountered. The Board noted that the Administration needed to demonstrate that it could control the growing costs of the project and realize the financial and service delivery benefits that had been promised in order to present a viable business case that provided justification for further investment by the Member States.

10. The present progress report has been prepared on the basis of audit examinations conducted from 9 January to 17 February 2017. The examinations included interviews and meetings with key officials based at United Nations Headquarters and at offices away from Headquarters (through videoconferencing), a review of relevant project documentation held by the Umoja project team and the Secretariat, and information provided by the project team in response to the audit requisitions issued. The present report covers the progress in deploying the Umoja solution, stabilizing the Umoja solution, mainstreaming the Umoja solution, the costs and benefits of Umoja, and functionalities in Umoja.

11. As part of the audit, the Board conducted an online user satisfaction survey in order to assess the views of users on the implementation of Umoja. The survey was conducted with the help of the Office of Information and Communications Technology. Through a set of 18 questions, the Board obtained feedback from

United Nations employees across the globe on different aspects, including access issues, the support received, the level of confidence of users and the effectiveness of the training on Umoja. The survey was originally scheduled from 30 January to 6 February 2017 and was later extended to 12 February 2017. The results of the survey are referred to in the relevant sections of the present report and can be found in annex IV.

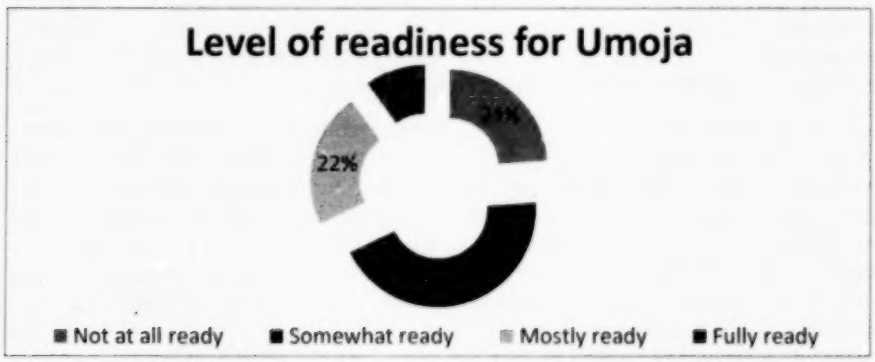
II. Deploying the Umoja solution

Organizational readiness for cluster 4

12. The Board noted in its previous reports that cluster 4 had been rolled out at a time when the Administration was unable to resolve basic issues, including access, login and role mapping. In the cluster 4 post-implementation survey conducted by the Administration, the majority of respondents (60 per cent) reported that they were able to use Umoja for work as needed and 36 per cent reported that they were not ready to work in the Umoja environment. The Board noted that the deployment of cluster 4, though challenging, had proceeded as planned.

13. In the online survey conducted by the Board in February 2017, with regard to the level of preparedness of the users, of the 4,551 valid responses to the question on the subject, only about 10 per cent of the respondents rated themselves as "fully ready" and 24 per cent were "not at all ready" to use Umoja at the time of implementation. (see figure I below).

Figure I
Level of readiness for Umoja



Source: User satisfaction survey conducted by the Board.

Deployment of cluster 5

14. The deployment of cluster 5 was originally planned for April 2016. It was postponed, at first, to September 2016 to enable continued stabilization support for clusters 3 and 4 and then by two more months to November 2016, on the basis of a request to the Steering Committee made by the Department of Management and the Department of Field Support. Cluster 5 was successfully rolled out in November 2016. According to the Administration, it has been one of its most successful deployments, evidenced by a smooth transition from legacy systems and the absence of any post-deployment challenges, and the decision to delay based on its assessment of operational readiness was pragmatic. Although the Administration has yet to fully assess the impact of the delay in the deployment of cluster 5 on the timelines for further deployment activities and the cost implications for the

remaining Umoja functionality, it stated that the delay had a minimal impact, since most of the Extension 2 functionality was independent of the cluster 5 deployment activities.

Service delivery functionality

15. The service delivery functionality,[1] which was first deployed to cluster 3, in June 2015, and later to cluster 4, in November 2015, was extended to all peacekeeping and special political missions and to the Department of Field Support at Headquarters on 1 July 2016. Activity types were mapped for missions, predominantly in logistics support services, medical services and facilities management, building on the 3,200 activity types that had been mapped for clusters 3 and 4.

Implementing the International Civil Service Commission compensation package

16. The Secretary-General, in his report on the implementation of the new common system compensation package in the United Nations Secretariat (A/70/896 and Corr.1), outlined the strategy for implementing the changes to the International Civil Service Commission (ICSC) compensation package. The implementation during 2016 was scheduled in two stages. The Board noted that stage 1 had been implemented on 1 July 2016 for the elements mandated by the General Assembly except the new mobility incentive and the discontinuation of the non-removal allowance. The related software changes were delivered by SAP in June 2016. The mobility incentive and the discontinuation of the non-removal allowance were implemented on 1 November 2016, retroactively from 1 July 2016.

17. In response to the Board's request for details of the expenditure incurred for implementing the changes described above, the Administration stated that no software costs had been incurred for the implementation of the changes and that it had mainly involved costs relating to staff and contractors' time. It added that some staff and contractors had been dedicated full-time to the implementation of the changes, while many had been necessarily involved part-time in the design, build, test and deploy phases. The Administration also stated that, in the absence of overhead allocation criteria, it was not feasible to derive the costs accurately. It added that, for the purpose of isolating expenses not to be funded from the project's budget, as directed by the General Assembly, the expenses attributable to the implementation of the changes would be determined and that, going forward, it had established work breakdown structure elements for all work streams, including the changes, in an effort to better capture costs. It stated that no specific funding source had yet been determined, as the General Assembly expected the costs to be absorbed by the Secretariat within the existing resources.

18. From the above, the Board noted that the Administration had not yet accounted for the costs relating to staff and contractors' time for the implementation of the changes to the ICSC compensation package. The costs attributable to the implementation being determined by the Administration needed to be identified and included in the total cost of ownership figures to be presented to the General Assembly in the next report of the Secretary-General.

[1] United Nations entities are mandated to provide services for other internal United Nations entities, for external clients (which include United Nations entities without Umoja) and within their own entities. The cost recovery of such services is standardized through Umoja.

Umoja training

19. Training users to work or perform in the new working environment is fundamental to the successful implementation of the Umoja solution. Adequate training is also required for capacity-building and the self-reliance of the business units and users, which will ultimately help in the mainstreaming of Umoja. Proper training is the primary solution to resolve problems at the local level, which will not only help users to work efficiently but also lessen the burden on the production team of supporting the Umoja solution. This will enable the production team to focus fully on the development of the new functionalities, which is essential for the timely completion and deployment of the remaining Umoja functionality.

20. The Secretary-General, in his eighth progress report on the enterprise resource planning project (A/71/390), stated that the Umoja training had focused on building local capacity and developing technical skills, reflecting the emphasis of the General Assembly, in its resolution 70/248 A, on effective training on Umoja as part of an integrated approach to training and capacity development.

21. In that report, he also stated that a blended learning approach had been implemented in cooperation with the Office of Human Resources Management, comprising a mix of computer-based training, instructor-led training and distance learning packages, organized into 13 functional areas. He further stated that the Umoja Academy, which targeted managers, process experts and local process experts, had focused initially on developing local process experts.

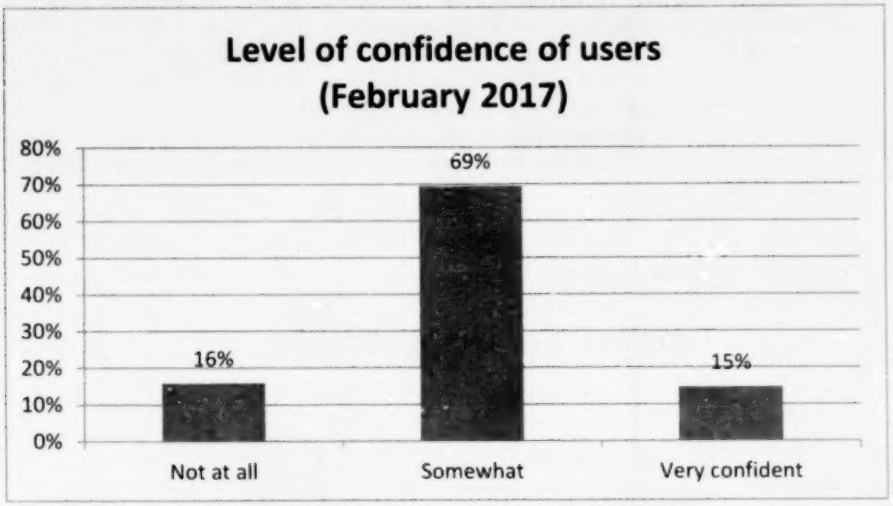
22. Local process experts are the nominated end users who are supposed to have complete knowledge of their functional areas and demonstrate a thorough understanding of the Umoja transactional process. Local process experts are critical for providing tier 0 support by reporting, troubleshooting and creating effective iNeed tickets. A continuing challenge for cluster 3 and 4 entities has been the inability to maintain a sufficient team of local process experts and to release local process expert trainers to meet production support and end-user training requirements. According to the report, 121 process experts were certified in one or more functional areas.

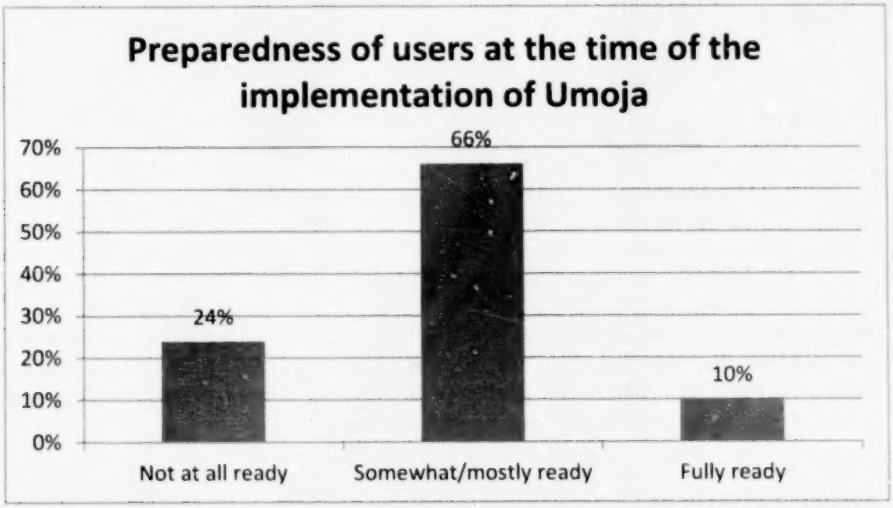
23. The Advisory Committee on Administrative and Budgetary Questions, in its related report (A/71/628), noted the efforts being made to improve Umoja training and encouraged the Secretary-General to continue to strengthen in-house capacity and expertise on Umoja.

24. The Administration indicated that 35,596 of the 40,694 Umoja users had been trained, of whom 32,240 had received training in multiple courses, implying that 5,098 users or 12 per cent of the total Umoja users had not received any training at the time of the roll-out of cluster 5.

25. In the online survey conducted by the Board, 66 per cent of the respondents reported that they felt somewhat or mostly ready and only 10 per cent fully ready at the time of the implementation of Umoja; 69 per cent were somewhat confident and approximately 15 per cent were very confident to work in Umoja at the time of the survey. The Board noted the need to enhance the training approach to accelerate the acquisition of Umoja-related proficiencies by the users. The results of the survey are shown in the graphs in figure II. The Administration stated that it fully recognized that training was a high priority for ensuring the proper use of Umoja and informed the Board that much was being done with each successive deployment to improve the level and quality of training. The learning experts of the Office of Human Resources Management have suggested additional enhancements to the job aids and training content, including more sophisticated methods of providing support, which are being actively considered by the process owners jointly with the Chief Information Technology Officer to strengthen training and support on an ongoing basis.

Figure II
Users' level of confidence as at February 2017 and preparedness at the time of the implementation of Umoja





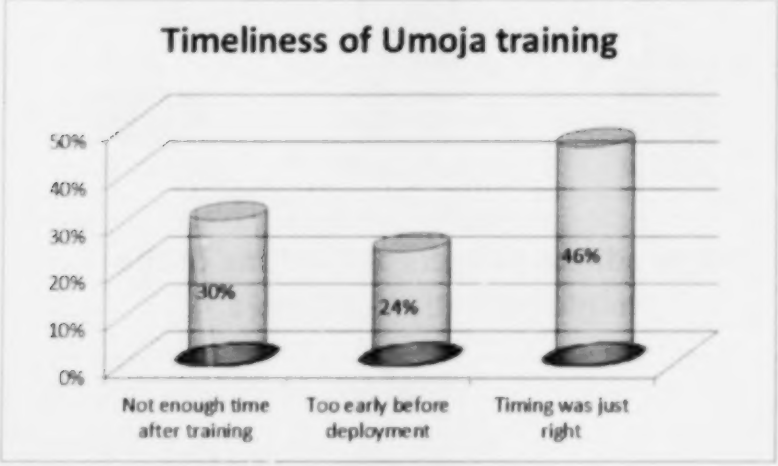
Source: User satisfaction survey conducted by the Board.

26. The Administration stated that all the training sessions that it offered were tracked by the Umoja project team and that training coordinators in each entity were responsible for tracking their respective end-user training. It added that all Umoja training materials were developed within the project's budget and that the training cost therefore related mainly to trainee and trainer time, travel of trainers and trainees, if applicable, and the cost of facilities, which tended to be negligible. In the case of instructor-led training, process experts and local process expert trainers usually delivered the training. It also gave its assurance that, to the extent possible, users would be certified before roles were assigned, but added that, in every deployment, incorrect role assignment caused by challenges in identifying the right distribution of roles tended to create a gap in training that was then overcome by subsidiary training efforts after deployment. It added that the paucity of training funds also tended to hamper some of those efforts, while providing assurance that every effort would be

made to train all identified users before deployment. However, the details of the targets and shortfalls in the conduct of training could not be made available.

27. In the online survey conducted by the Board, of the respondents who had received training on Umoja, 46 per cent reported that they felt that the timing of the training had been just right, 30 per cent felt that they had received training without enough time for deployment and 24 per cent felt that they had received training too early before deployment. Such responses are indicative of the fact that the timing of the training could be further improved for the optimum retention of training inputs and their subsequent application by the respective users. The findings are depicted in figure III below.

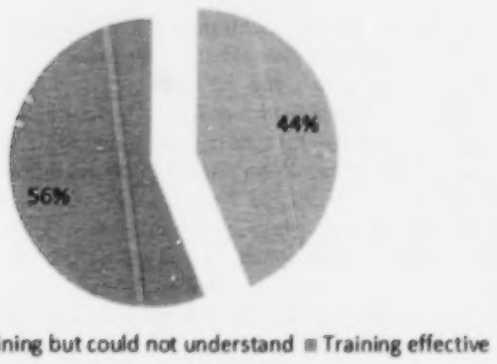
Figure III
Timeliness of Umoja training



Source: User satisfaction survey conducted by the Board.

28. With regard to the effectiveness of the training, 56 per cent of the respondents reported that they felt that they had been adequately trained, while the remaining 44 per cent felt that they were unable to understand Umoja despite the training received. The results are depicted in figure IV below.

Figure IV
Adequacy of training



Source: User satisfaction survey conducted by the Board.

29. The Administration stated in its response that training pertaining to cluster 5 had been handled by the Department of Field Support, which had indicated that 100 per cent of the training had been completed for transactional users of the human resources module and 95 per cent for portal users as at November 2016. The Administration added that, having found the learning curve in the areas of the Galileo decommissioning project to be steep, it had decided to conduct training in three cycles.

30. The Administration also stated that it found that a target of 100 per cent training of end users was not feasible for clusters 3 and 4, given the time available and the number of trainers. It added that all entities had targeted their training at key staff to ensure the continued functioning of the entity after Umoja went live, and some staff had been required to receive training several weeks prior to Umoja going live in order to meet the full scope of training required prior thereto. Additional support had been provided during ramp-up, and end users had continued to receive training throughout 2015 and 2016.

31. While acknowledging the pressures on time and manpower indicated by the Administration, the Board is of the opinion that the training of the end users is essential for the successful implementation of any system, which can be achieved by factoring the requirement of training into the plans for deployment.

32. **The Board recommends that mandatory training should be provided to all users before the deployment of any functionality. The feedback received should be taken into account when designing the curriculum.**

III. Stabilizing the Umoja solution

Stabilizing of clusters 3 and 4

33. Problems surfaced in different areas during the cluster 4 stabilization phase, especially in the transition between budget periods. In the eighth progress report of the Secretary-General on the enterprise resource planning project report (A/71/390), it was stated that, overall, the production support model had worked but that the stabilization phase for clusters 3 and 4 had been longer than anticipated and had stretched process experts both in the Umoja team and among the process owners, negatively affecting the Umoja Extension 2 design and build. The post-implementation review task force, chaired by the Controller, was revived to ensure the speedy resolution of the issues reported by cluster 3 and 4 entities.

34. The issues raised by cluster 3 and 4 entities were harmonized by the post-implementation review task force into a set of 67 recommendations, classified by functional area. Those recommendations were assigned to the process owners and the Chief Information Technology Officer, with target resolution dates. The Administration stated that, of the 67 recommendations, 42 had been implemented, 12 had been categorized as continuous improvements to be addressed over time and the remaining 13 were in the process of implementation.

35. Taking note of the point raised by the Board with regard to the outstanding recommendations of the post-implementation review task force, the Administration gave its assurance that the process owners had agreed to work with the Umoja team to review all outstanding issues, including those from the post-implementation review task force, to establish a revised prioritization that would allow both the Umoja team and the business community to align efforts for developing, testing and rolling out the enhancements or changes that were prioritized and that a detailed timeline would be established for such enhancements or changes.

36. While noting the steps taken by the Administration, the Board is of the opinion that the 12 recommendations that were identified to be implemented in the long term should be implemented within a prescribed time frame and that the progress thereof should be monitored at regular intervals. The Administration informed the Board in July 2017 that the Umoja post-implementation review task force had officially ended its operations on 1 May 2017. After nearly two years of intensive efforts by the global Umoja teams, the process owners, the Office of Information and Communications Technology and the Umoja project team in New York, the Administration deemed the majority of the technical and process-related challenges in Umoja reported by the entities in clusters 3 and 4 to have been resolved within the existing parameters of Umoja and other United Nations enterprise solutions and, most importantly, by the underlying policies and business processes that were in use across the Secretariat. The remaining recommendations that had not yet been resolved, including the long-term recommendations, would be managed within a new continuous improvement model, led by the Department of Management, by which the Umoja solution would be technically upgraded and improved as needed.

Business intelligence reports

37. Umoja was expected to provide more comprehensive, accurate and timely management information. The Board reported, in its previous report (A/71/180), that the development and use of business intelligence reporting was in its infancy at the time of audit. The Board found that, as at December 2015, 1,006 reports were available in Umoja, covering such areas as accounts receivable, accounts payable, time management and fixed assets, but that their usefulness was undermined by poor data quality, and reported that, as a short-term measure, the Organization was replicating reports that it had previously run on IMIS. Accordingly, in order to avoid Umoja being used simply as a very costly replacement for IMIS, the Board suggested that the full business intelligence and reporting capabilities of the system should add value and be utilized in a planned and effective manner to support decision-making by the Administration and stakeholders.

38. As at 31 December 2016, there were 910 power users and 3,093 analytical users[2] of Umoja. The SAP Business Objects reporting platform of Umoja currently provides 172 standard corporate formatted and ad hoc reports. Power users had produced and shared 2,753 reports in the platform. The frequency of usage and viewing of different reports varied from more than 45,000 for one report to less than 10 for other reports, with average views of about 1,600 for standard reports. Only five of the reports had been viewed more than 10,000 times. It was also noted that only four reports created by the power users had greater-than-average views, indicating that the reports created by the power users were limited in their usefulness.

39. A phased transition of the responsibilities of business intelligence reporting from the Umoja project to the Office of Information and Communications Technology began in 2016 as part of the mainstreaming of project functions. The Board was informed that the Office of Information and Communications Technology, by conducting a series of bilateral workshops with each entity to identify and develop key additional reports, had identified a requirement of more

[2] Business intelligence reports are available to business intelligence users subject to their roles:

(a) **Power user:** a trained and/or certified functional business user who can customize reports and analysis areas to share with others;

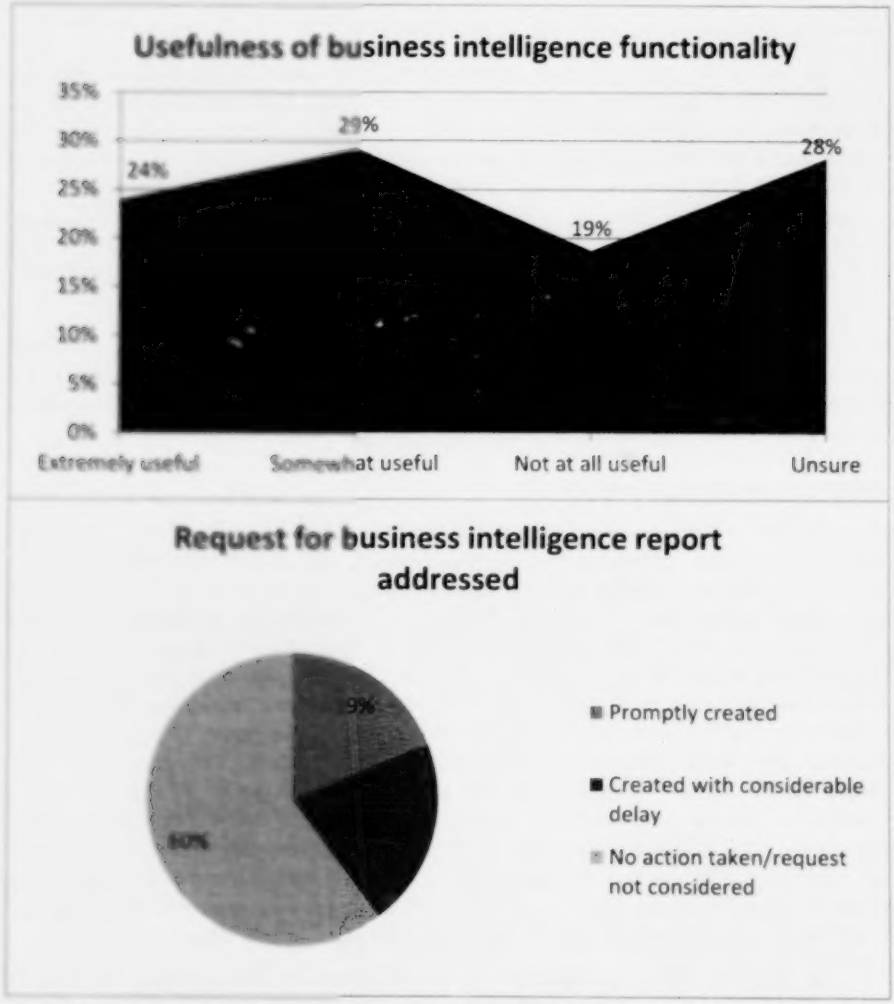
(b) **Analytical user:** a data analyst who can utilize all formatted and ad hoc report functionality for private use; separate dashboard access required;

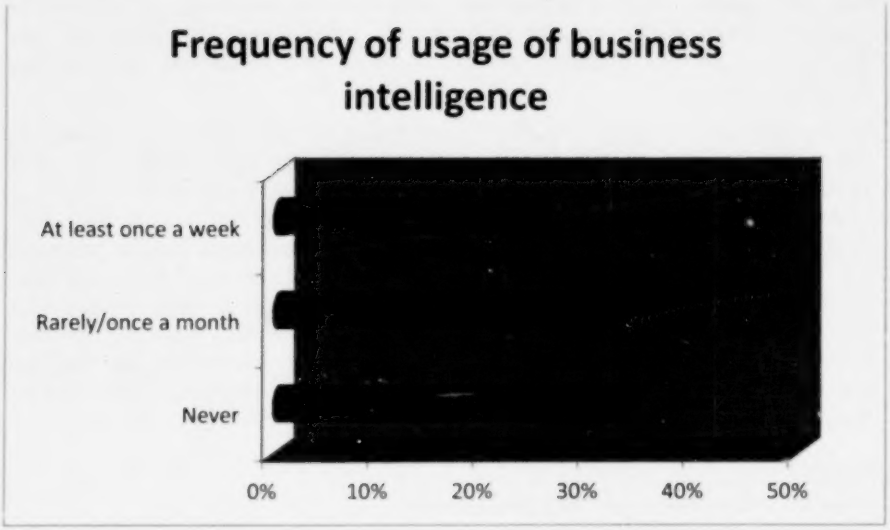
(c) **Common user:** a report consumer who can print, schedule and distribute formatted reports only.

than 700 reports. Such a requirement indicates that the business intelligence reporting functionality requires substantial enhancement to transform the functionality into an effective decision support and monitoring tool for the Administration.

40. In the online survey conducted by the Board, 19 per cent of the respondents reported that they found the business intelligence reporting functionality to be not at all useful, while another 28 per cent were not sure about its usefulness. On the issue of the response to requests for new business intelligence reports, 60 per cent of the respondents who had requested additional business intelligence reports indicated that no action had been taken on their request or that their request had not been considered, while 21 per cent indicated that the reports had been created with considerable delay. In addition, 34 per cent of the respondents indicated that they had never used the business intelligence reporting functionality, 41 per cent that they used the functionality rarely or once a month and 25 per cent that they used the functionality at least once a week. The findings are depicted in figure V below.

Figure V
Business intelligence reporting functionality





Source: User satisfaction survey conducted by the Board.

41. In respect of business intelligence reports, the Administration stated that the Office of Information and Communications Technology coordinated the delivery of such reports and that requests for reports were vetted first by the process owners. It added that a meeting had been held in February 2017 with the process owners and the Chief Information Technology Officer, at which it had been stressed that resources must be committed by the business units and the Office of Information and Communications Technology and the Umoja team for business intelligence and for other enhancements and continuous improvements to ensure the efficient delivery and use of resources.

42. **The Board recommends that the Administration, in consultation with the users of reports, prepare a comprehensive plan for the configuration of business intelligence reporting with the objective of incorporating frequently used reports into the standard corporate reports.**

Assurance maturity framework

43. In the seventh progress report of the Secretary-General on the enterprise resource planning project (A/70/369 and Corrs. 1 and 2), it was noted that the Administration had engaged an external consultant to carry out an assurance project to identify and analyse the areas of risk that might affect the immediate and long-term value of Umoja to the Organization. The report of the consultant was based on observations made between May and July 2015 on the basis of interviews with senior leadership, leading practices in enterprise resource planning, deployment documents and Umoja role data. It was also stated in the report of the Secretary-General that action plans would be developed to address the gaps identified. However, the Board notes that, in the eighth progress report of the Secretary-General on the enterprise resource planning project (A/71/390), although the most significant risks being managed were identified and it was noted that the project's risk and issue database had been extended to key resources in the process owner and entity business units, no specific mention was made of the recommendations of the consultant or the actions initiated by the Administration in that area.

44. On the basis of a test check of the records provided in that regard, the Board observed that the consultant had identified the operating model risks, the impact of the risks and the mitigating actions and had indicated that the benefits of Umoja

would not be fully realized unless those risks were addressed. The risks, impacts and mitigating actions are presented in table 1 below.

Table 1
Operating model risks

Operating model risks	*Impacts*	*Mitigating actions*
Varied interpretation of processes	– Difficult for people to move and transfer skills between entities	Refine governance structure
	– Inefficient business practices	
	– Errors in data due to undefined master data management processes	
Outdated and unclear policies and procedures	– Disregard for policies that are perceived to be outdated	Update policies and procedures
	– Workarounds leading to weaker process performance	
	– System may not reflect what is stated in an outdated policy	
Imbalanced workload	– Decrease in morale and increased turnover	Conduct workload analysis
	– Confusion around long-term progression post-Umoja implementation	
	– Inefficiencies in process execution and loss of productivity	
	– Backlog of work in the system and delays due to increased workload for some roles	
Fragmented operations	– Training and development occurring for transactional rather than substantive skills	Optimize transactional processes
	– Increased efforts and costs in relation to transactional activities	
	– Master data management is more challenging owing to the higher number of transaction locations	

Source: Information provided by the Administration.

45. In response to the operating model risks described above, the Administration indicated the following:

(a) With regard to the risk of varied interpretation of processes, the Administration stated that, while the process owners had ensured the standardization of business processes during the deployment of Umoja, the process owners, as part of the Umoja post-implementation review task force for each cluster, had also been reviewing gaps in the understanding of processes or even weaknesses in policies in an effort to address them. Residual issues relating to end-to-end process standardization, including processes partly outside the scope of Umoja, would continue to be addressed through regular meetings of the process owners and the global service delivery model project wherever appropriate;

(b) With regard to the risk of outdated and unclear policies, the Administration stated that the complex administrative structures of the Secretariat, including key administrative policies, procedures and delegations of authority, were being reviewed so as to increase agility and responsiveness to operational needs. Those structures were analysed and redundant policies abolished on an ongoing basis, and the remaining updates would be carried out to align manual processes with Umoja. The Administration added that administrative processes continued to be analysed to abolish redundant and non-value-adding process steps;

(c) With regard to the risk of imbalanced workloads and the associated loss of productivity, decrease in morale, delays and the mitigating action of conducting workload analysis through tools and surveys, the Administration explained that, while processes eliminated by Umoja and the redistribution of work among locations and organizational entities had been factored into assessments and projections of Umoja benefits, a more systematic and comprehensive assessment would be undertaken in the context of the global service delivery model project, as reallocation of resources across budget sections and geographical locations would require the approval of the General Assembly.

46. The Administration further explained that the findings of the study that the Board had brought to its attention had since been discussed at the meeting of the process owners and would be reviewed and implemented wherever deemed beneficial.

47. **The Board recommends that the Administration take appropriate mitigating action to manage the risks identified in the assurance project and present the status of the implementation thereof in the next progress report to the General Assembly.**

48. The Administration, while accepting the recommendation, gave its assurance that the status of the implementation of the recommendations of the consultant would be presented in the ninth progress report of the Secretary-General on the enterprise planning project, to be submitted to the General Assembly.

Data migration

49. In data conversion exercises, it is important that the data conversion plan not require changes in data values unless absolutely necessary for business reasons. Moreover, changes made to data values should be documented and approved by the business process data owner (COBIT BAI 07.02.4).[3] It must also be ensured that the testing is designed and conducted by a test group independent from the development team (COBIT BAI 07.05.4). The observations of the Board on the

[3] Control Objectives for Information and Related Technologies (COBIT) is a comprehensive framework of globally accepted practices, analytical tools and models that can help any enterprise to effectively address business issues through the governance and management of information and technology. BAI stands for build, acquire and implement.

process of migrating data relating to procurement and inventory are presented in the paragraphs below.

50. The Board noted that only the purchase orders that were open on the date of migration had been migrated to Umoja from the legacy systems, while the previous years' data (closed purchase orders) had not been migrated. Likewise, only the final inventory values had been migrated to Umoja, but no historical data.

51. Assurances had been received from business owners regarding the valuation of inventory at the time of migration. However, the Board noted no independent oversight of the data cleansing and enrichment process on the part of the business units.

52. The Administration stated that it had recommended a physical count by entities before the final data conversion and that each entity was responsible for ensuring that the stock figures provided in Umoja were correct and updated. It added that, as entities and business owners were themselves responsible for data validation, they had cleaned or purged their data and transferred them to the Umoja team. The data had been uploaded by the Umoja team. The Board noted that the post-upload validation had been carried out by the business team and that there had been no joint sign-off by the Umoja team as to the accuracy and/or completeness of the data uploaded in Umoja for any of the business units, even though the Umoja team had technical expertise relating to data validation.

53. The Administration responded further that conversion programmes had been tested and validated by the Umoja project team. The Administration explained that the process adopted for the data conversion validation for Umoja inventory and warehouse management for cluster 3 and 4 entities had included post-upload data validation by an Umoja process expert as a prerequisite step for business validation. In addition, it was stated that a document containing checks performed by the Umoja process expert as part of the post-upload validation and the results of the detailed analysis and validation of the data upload by the process expert had been brought to the attention of the business users in order to support their review and sign-off. Furthermore, the Administration explained that the data remained the responsibility of the business units and that their sign-off on the accuracy thereof was considered critical, with the project team lending its expertise to facilitate their understanding of the process. The Administration added that the data conversion validation for inventory and warehouse management for the Galileo decommissioning project in peacekeeping and special political missions included the post-upload data validation by an Umoja process expert as a prerequisite step for business validation.

54. **The Board, while noting the response of the Administration, recommends that procedures be put in place to ensure that data accuracy and reliability are strictly adhered to in the migration of the inventory data from the legacy systems to Umoja.**

IV. Mainstreaming the Umoja solution

55. In its resolution 70/248 A, the General Assembly requested the Secretary-General to continue to develop and retain in-house expertise on Umoja and to develop, as a matter of priority, a detailed action plan to ensure the transfer of knowledge from consultants to programme and project staff and that the knowledge acquired is maintained within the Organization. The Board, in its fifth annual progress report on the implementation of the enterprise resource planning system (A/71/180), stated that the transfer of Umoja had been included in the five-year

strategic plan of the Office of the Chief Information Technology Officer and was not expected to be completed until 2019.

56. The Secretary-General, in his eighth progress report on the enterprise resource planning project (A/71/390), noted that preparing for successive deployments and managing post-deployment challenges had exerted considerable pressure on a limited pool of process experts, which had constrained knowledge transfer from contractors to staff. He added that, as clusters 3 and 4 had begun to stabilize, such knowledge transfer had been accelerated and that, since June 2016, there had been a progressive drawdown of contractual resources wherever feasible. The mainstreaming plan presented to the General Assembly in the report contained the resource proposals for 2016-2017 and projections for 2018-2019. The Assembly approved the resources for 2016-2017. In the progress report, it was also noted that the project team would eventually be mainstreamed both into the Office of Information and Communications Technology and into the business units. However, in the report, the numbers of personnel who would be mainstreamed into the business units and the Office of Information and Communications Technology were not explicitly stated. There is therefore a risk that it may not be feasible to accommodate all the technical skills needed for such support after the deployment of Umoja Extension 2 and to leave sufficient capacity to also accommodate critical business-leaning expertise for mainstreaming into business units. The Board also noted that the budgetary resources for mainstreaming into the business entities were not explicitly mentioned in the report.

V. Umoja costs

57. The Advisory Committee, in its second report on the proposed programme budget for the biennium 2012-2013 (A/66/7/Add.1) stated that it had been informed that the project team was conducting an analysis of the total cost of ownership of the Umoja project. The study would include a complete costing of items funded from the Umoja project budget, as well as costs that were to be borne by United Nations departments/offices. The Advisory Committee reported that the representatives of the Secretary-General had stated that such a study reflected a best practice for large enterprise resource planning and information and communications technology projects in which the majority of development costs were borne by the central project but costs for related activities, such as the cleansing of data to be migrated to the enterprise resource planning system, were supported by the user departments that owned the data and must perform those activities as part of their operational responsibilities. The Committee had also been informed that the study was expected to be completed by the end of the first quarter of 2012.

58. The Advisory Committee, in its latest report on the subject (A/71/628), expressed its disappointment that little progress had been made to respond to the requests of the General Assembly and maintain a detailed accounting of the indirect costs absorbed by departments, or to conduct an analysis of the total cost of ownership of the Umoja project. The Committee was of the view that the lack of information on the effective implementation costs of the project reflected a weakness in the governance of the project and might have an impact on informed decision-making by the Assembly. While recognizing that detailed information on all such costs might not have been captured at the start of Umoja implementation owing to the limitations of previous information systems such as IMIS, it considered that greater efforts could have been made to reasonably estimate such costs. The Advisory Committee also stated that the total cost of ownership of the Umoja system was a key input for informed decision-making on investments.

59. The Board, in its fifth progress report (A/71/180), reported that robust estimates of future support and maintenance costs for Umoja had not yet been produced. The total cost of ownership of Umoja over 15 years, including capital and maintenance costs, was unknown, but was likely to exceed $1 billion. The Administration had not calculated the total cost of acquisition and operating costs of Umoja.

60. The total cost of ownership is the sum of the direct and indirect costs. The latter are composed of the people time (hours) of various departments and entities for Umoja deployment and support, including legacy data cleansing and enrichment and training. The cost of development (capital expenditure) of Umoja is borne under the Umoja project, while maintenance and support costs (revenue expenditure) are borne by the Office of Information and Communications Technology.

61. The Umoja project team has not yet assessed the total cost of ownership and stated that, while the direct costs could be easily quantified, the quantification of the indirect costs had been challenging, as time sheets were not maintained for staff of the Secretariat, making it especially challenging to track the time of staff engaged only part time in such activities. The team was attempting to estimate that cost retroactively, on the basis of reasonable assumptions, to support the information in the progress report to be submitted to the General Assembly in September 2017. The Board noted that the indirect costs would be computed only from 1 January 2016, while the historical indirect costs for earlier relevant periods would be estimated for inclusion in the total cost of ownership to be computed by the Administration.

62. The Board noted that most of the training had been conducted in-house with materials provided by the Umoja project team. The Board also noted that the costs of the involvement of departments were attributable to staff time, facilities and travel. Such costs could therefore not be determined by the existing process of capturing information relating to Umoja expenditure, and the total cost of ownership was likely to be understated on that account. This was also confirmed by the Administration, which indicated that there was no separate approved budget for training on the project, which was managed internally.

63. **The Board recommends that the Administration consider implementing time sheets for tasks relating to the implementation of Umoja to fully capture the indirect costs and take steps to account for the costs incurred in training in terms of staff time and travel in the calculation of the total cost of ownership of Umoja.**

VI. Umoja benefits

64. In its resolution 70/248 A, the General Assembly requested the Secretary-General to accelerate the development of benefit realization plans and to report thereon in the next progress report, without prejudice to established budgetary procedures and the prerogatives of the Fifth Committee. The Board, in its fifth annual progress report on the implementation of the enterprise resource planning project (A/71/180), stated that the Administration did not have an agreed methodology for realizing benefits and that the Board was unable to validate the "tangible benefits realized" reported to the Advisory Committee in September 2015. It also stated that the work to realize the benefits was at a very early stage.

65. The Secretary-General, in his eighth progress report, indicated that the process owners had reviewed previously identified areas, as well as new areas of potential impact, and stated that the modified approach linked qualitative improvements to possible quantitative benefits. It tried to leverage the measurement and comparability of pre-Umoja and post-Umoja transaction volumes, or other drivers wherever

available, to enrich the assessment of benefits. In the report, the qualitative improvements in the areas of human resources, finance, central support services, supply chain and logistics, and technology and data management were enumerated.

66. The Advisory Committee, in document A/71/628, emphasized the need for a more robust business case for the Umoja project, which represented one of the largest and highest-value business transformation initiatives undertaken by the United Nations. In the Committee's view, such a business case should reflect actual efficiencies and benefits achieved through the implementation of the solution, rather than artificial budget reduction targets, and should also provide clarity on the benefits and the costs of the project. The Committee recommended that the Secretary-General be requested to refresh the business case for the Umoja project, taking into account all the relevant recommendations of the Board.

67. The original benefit realization model was presented to the General Assembly by the Secretary-General in 2009 in his first progress report on the enterprise resource planning project (A/64/380). In the said report, the benefits to be realized after the implementation of Umoja in different fields were calculated on the basis of savings in full-time equivalent. However, the Administration stated in February 2017 that the original benefit assessments presented to the General Assembly were predicated on the results of surveys of business entities and the extrapolation of a limited number of responses that were not necessarily representative. It stated, moreover, that the reductions in activity-based process times were based on assumptions or industry experience relating to realizable efficiencies for each process. The Administration added that the baselines framed in 2009 had their limitations.

68. In that regard, the Board observed that, owing to implementation challenges, the process of benefit realization had been given lower priority before 2016. The Administration informed the Board that, until the 2016-2017 biennium, a top-down approach had been adopted, according to which the heads of departments had quantified benefits on the basis of the overall savings to be made. The Administration stated that, from the budget for the 2018-2019 biennium, a bottom-up approach with the involvement of the business process owners had been adopted, involving a review of the areas of the original benefits cases as to their continuing validity and applicability and the quantification of the projected benefits in the updated business case from process owners in the fields of human resources, central support services, finance, logistics and supply chain, and information technology. It added that the budget for 2018-2019, to be presented to the General Assembly, would be based on those projections. The Administration also stated that updates to the benefit realization plan would be submitted to the Assembly at its seventy-second session.

69. The Board is of the view that the bottom-up approach is an improvement on the previous top-down approach. The Board recognizes that, for many processes, a comparison of pre-Umoja and post-Umoja data is not possible, as processes in the previous systems were largely outside the system and the system data were limited to the final actions taken. No baseline data were available against which to measure Umoja benefits. Furthermore, the benefits arrived at by the Administration continue to be based on assessments made by the process owners and business units. In that respect, the Board observed that the post-Umoja assessment of process/activity time was not based on the rigorous time stamp analysis method from the enterprise resource planning database.

70. **The Board recommends that the figures in the updates to the benefit realization plan to be submitted to the General Assembly in respect of the decrease in process/activity time be calculated on the basis of time stamp figures where such figures are available in Umoja.**

71. **The Board also recommends that the updated benefit realization plan, after approval by the General Assembly, be frozen to serve as the baseline for the monitoring of the future benefit realization that will arise from the use of Umoja.**

72. The Administration accepted the recommendation.

VII. Functionalities in Umoja

73. The Board noted opportunities for incorporating additional functionalities into Umoja, as discussed in the paragraphs below.

Valuation of inventory

74. International Public Sector Accounting Standard 12 (Inventories) provides fundamental guidance on the recognition, classification, measurement and disclosure requirements of inventories. Pursuant to the standard, inventories shall be measured at the lower of cost and net realizable value, except when inventories are acquired through a non-exchange transaction, in which case their cost shall be measured at their fair value as at the date of acquisition. The standard also stipulates that inventories shall be measured at the lower of cost and current replacement cost where they are held for distribution at no charge or for a nominal charge; or for consumption in the production process of goods to be distributed at no charge or for a nominal charge.

75. COBIT_EDM_01.03.6 recommends ensuring that information technology is used in compliance with relevant obligations (regulatory, legislation, common law and contractual), standards and guidelines. COBIT_APO_12.04.2 recommends that decision makers be provided with an understanding, inter alia, of significant reputation, legal or regulatory considerations.[4]

76. In that regard, the Board observed that Umoja had the standard SAP functionality to calculate the moving average price but did not have the functionality to automatically arrive at the lower of the cost and net realizable value or current replacement cost, which is a mandatory requirement of IPSAS 12. The Board was informed that the process was performed manually by generating business intelligence reports showing the moving average price for determining cost and then arriving at the valuation of inventory to be included in the financial statements by comparing that with the net realizable value or current replacement cost determined outside the system. The Administration also stated that, in the determination of net realizable value and current replacement cost, additional parameters had to be taken into consideration, such as: (a) whether the material would be procured against a global, regional or local contract, when Umoja Extension 2 demand and supply planning were fully deployed; and (b) whether adjustments to cost would be made only annually for financial statements or more frequently for managerial decisions. As the final inventory valuation exercise continues to be carried out through manual interventions, it creates a risk in relation to the accuracy of the underlying calculations of inventory valuation, which forms an integral part of the financial statements.

77. The Administration took note of the risk referred to by the Board and stated that, given the parameters to be considered, the final decision on whether to automate and how much to automate would have to be guided by risk versus benefit, given that that was not a standard SAP functionality, and that the workplan of Umoja would also have to be taken into account before making such a decision.

[4] EDM and APO stand for evaluate, direct and monitor and align, plan and organize, respectively.

E-tendering in the procurement module

78. Even after the implementation of the procurement module in Umoja, there is no e-tendering functionality to bring the benefits of global sourcing, enhanced transparency and enforcing price efficiency in procurement through increased competition. The Administration initially stated that e-tendering had not been included in Umoja, as it might prevent all participating bidders across the globe from having equal opportunity, and added that certain vendors in some countries might not have access to the Internet and would therefore be denied the opportunity to participate in the tender if the e-tendering mode were fully adopted in Umoja. While noting the concerns expressed by the Administration, the Board observes that global sourcing is one of the important objectives of the information and communications technology strategy adopted in 2014 and that the requirement for various items will therefore be consolidated to source the supplies at the global level, which will lead to optimization in the cost of procurement. Since the value of the consolidated supply order would be much higher in respect of many items, e-tendering should be feasible, as major registered suppliers should have Internet access and be able to submit their bids online. Furthermore, e-tendering could be introduced for procurement involving a cost greater than a specified value, which is likely to reduce procurement time significantly, resulting in improved supplies and cost optimization, and will also enhance transparency and accountability in United Nations procurement.

79. The Administration stated that, if a policy decision were to be taken at the appropriate level, it could be incorporated into Umoja and added that an e-tendering application was being piloted in the Procurement Division for certain commodities and that the General Assembly had been provided updates on the pilot (see A/69/710 and A/71/681).

80. **The Board recommends that the results of the e-procurement pilot be expeditiously analysed and taken into account when implementing e-tendering for all applicable items.**

81. The Administration accepted the recommendation but pointed out that the e-tendering solution must integrate with the Umoja Extension 2 supply chain management ordering modality and could not proceed until that solution had also been defined.

VIII. Acknowledgement

82. The Board wishes to express its appreciation for the cooperation and assistance extended to its staff by the Under-Secretary-General for Management and the project director, together with the members of their staff.

(*Signed*) Shashi Kant **Sharma**
Comptroller and Auditor General of India
Chair of the Board of Auditors
(Lead Auditor)

(*Signed*) Mussa Juma **Assad**
Controller and Auditor General of the United Republic of Tanzania

(*Signed*) Kay **Scheller**
President of the German Federal Court of Auditors

30 June 2017

Annex I

Status of implementation of recommendations up to the year ended 31 December 2015

No.	*Report reference*	*Summary of recommendation*	*Administration comments on status — April 2017*	*Board comments on status — June 2017*	*Fully implemented*	*Under implementation*	*Overtaken by events*	*Not implemented*
1	A/71/180, para. 23 (a)	The Administration assess the challenges facing the project and develop prioritized and fully costed options to implement the remaining scope of the Umoja solution.	Options were presented to and accepted by the General Assembly in the eighth progress report of the Secretary-General (A/71/390). The Administration requests that this recommendation be closed.	The actions are still in progress. The Board therefore considers the recommendation to be under implementation. The progress will be verified in the next audit.		X		
2	A/71/180, para. 23 (b)	Heads of business units address user training needs as a matter of urgency by: (i) performing a skills needs analysis to identify training requirements for users in each business unit, (ii) developing a costed training plan for delivering the required training, and (iii) maintaining an up-to-date skills matrix, so that appropriate training can be provided as staff leave and new staff join.	This recommendation is in progress. The project will continue to maintain the Umoja training environment for trainees for practical lessons until it is fully mainstreamed. Process owner focal points for mainstreaming training had been designated by 31 January 2017. A draft mainstreaming workplan and "RACI" chart were prepared and are being jointly reviewed with focal points. The training budget for the entities for sustaining Umoja training locally would be derived in future from the central training budget managed by the Office of Human Resources Management, and the entities would therefore have to compete for resources, as well as other substantive and technical skills development. As described in paragraph 150 of document A/71/390, global training coordination functions are planned to be mainstreamed to the Office of Human Resources Management from 2018. The Administration requests that four related recommendations (A/68/151, para. 16; A/70/158, para. 19 (f); and A/71/180, para. 23 (b) and (c)) be reformulated into two recommendations in order to better reflect the progress achieved and the work still in progress.	The Board notes the Administration's response and considers the recommendation to be under implementation.		X		

No.	Report reference	Summary of recommendation	Administration comments on status — April 2017	Board comments on status — June 2017	Fully implemented	Under implementation	Overtaken by events	Not implemented
3	A/71/180, para. 23 (c)	The Administration ensure business units are supported in the application of the new methodology developed to identify and realize the benefits from improved ways of working; this should include providing access to skills and capability in operational improvement, and holding business areas to account for delivering the expected benefits.	This recommendation is in progress. Details of the new benefits case as defined by the five process owners, including an updated assessment of the qualitative and quantitative benefits, are contained in document A/71/390. The report also contains adjusted quantitative amounts for peacekeeping and the regular budget (of which special political missions are a part). Further details of the methodology applied Organization-wide have been included in the budget guide for the biennium 2018-2019. The Administration requests that four related recommendations (A/68/151, para. 16; A/70/158, para. 19 (f); and A/71/180, para. 23 (b) and (c)) be reformulated into two recommendations in order to better reflect progress achieved and work still in progress.	The Board notes the Administration's response and considers the recommendation to be under implementation.		X		
4	A/71/180, para. 23 (d)	The Administration should calculate the total cost of ownership of Umoja over its proposed operating life.	This recommendation is in progress. Details of the new benefits case as defined by the five process owners, including an updated assessment of qualitative and quantitative benefits, are contained in document A/71/390. The report also contains adjusted quantitative amounts for peacekeeping and the regular budget (of which special political missions are a part). Further details of the methodology applied Organization-wide have been included in the budget guide for the biennium 2018-2019. The Administration requests that four related recommendations (A/68/151, para. 16; A/70/158, para. 19 (f); and A/71/180, para. 23 (b) and (c)) be reformulated into two recommendations in order to better reflect the progress achieved and the work still in progress.	The Board notes the Administration's response and considers the recommendation to be under implementation.		X		

No.	Report reference	Summary of recommendation	Administration comments on status — April 2017	Board comments on status — June 2017	Fully implemented	Under implementation	Overtaken by events	Not implemented
5	A/71/180, para. 23 (e)	The Office of Information and Communications Technology and process owners develop detailed mainstreaming plans and seek approval for the required funding at the seventy-first session of the General Assembly.	The Office of Information and Communications Technology mainstreaming plan has been developed and is being monitored and updated on a regular basis. Process owner focal points for mainstreaming had been designated by 31 January 2017. The Administration requests that four related recommendations (A/70/158, para. 19 (c), (d) and (e); and A/71/180, para. 23 (e)) be reformulated into two recommendations in order to better reflect the progress achieved and the work still in progress.	The Board notes the Administration's response and considers the recommendation to be under implementation.		X		
6	A/70/158, para. 19 (a)	Increase the degree to which Umoja is actively and visibly led by all heads of business units, with support from process owners and Umoja project management.	The Umoja post-implementation review task force is the vehicle that has been used predominantly for this engagement. The process owners meet on a monthly basis to discuss demand management and stakeholder engagement as part of continuous improvements. Furthermore, the Secretary-General presented to the General Assembly at the main part of its seventy-first session a proposal for a global service delivery model (A/71/417), which had been prepared in consultation with relevant business units, service providers and process owners and contained service delivery proposals for human resources administration, payroll and accounts payable, as well as the expansion of shared services to the field and the consolidation of services in New York. The General Assembly took note of the report, decided to establish a dedicated global service delivery model project team, and requested the Secretary-General to submit for the consideration of the Assembly at the main part of its seventy-second session a report on the global service delivery model containing a comprehensive and fully developed proposal that continues to take into account the views of all stakeholders.	The Board notes the Administration's response and considers the recommendation to be under implementation.		X		

No.	Report reference	Summary of recommendation	Administration comments on status — April 2017	Board comments on status — June 2017	Fully implemented	Under implementation	Overtaken by events	Not implemented
			The Administration requests that two related recommendations (A/69/158, para. 29 (c); and A/70/158, para. 19 (a)) be reformulated into one recommendation that takes into account the progress made and to be made.					
7	A/70/158, para. 19 (b)	Assess thoroughly the risks attached to the current Umoja deployment schedule and consider contingency and other measures that may be necessary to mitigate those risks.	Extension 2 workplans were presented to the General Assembly in document A/71/390. The schedule, although demanding, is achievable.	The Board notes the Administration's response and considers the recommendation to be implemented.		X		
8	A/70/158, para. 19 (c)	Independently review the estimated capacity required across the support model to meet expected demands following cluster 3 and 4 deployment and take action to address any gaps.	As reported in document A/71/390, production support arrangements were strengthened following the recommendations of the post-implementation review task force for clusters 1 and 2. Tickets are logged and tracked through the iNeed service management system, and a multi-tiered arrangement handles and escalates tickets accordingly (para. 36). However, sustaining support for Umoja will also entail building capacity in business areas for not only training but also testing and production support. During phases of significant software development, such as Extension 2, the pressure on a limited number of process experts to concurrently deal with testing, training and production support becomes problematic. Building upon the lessons learned from the Headquarters deployment group and the Office of Human Resources Management, process owners will focus on building teams globally for testing, training and production support and identify and allocate skilled resources as part of mainstreaming to the business (para. 151). The Administration requests that four related recommendations (A/70/158, para. 19 (c), (d) and (e); and A/71/180, para. 23 (e)) be reformulated	The Board notes the Administration's response and notes that the recommended action has not been implemented.				X

No.	Report reference	Summary of recommendation	Administration comments on status — April 2017	Board comments on status — June 2017	Fully implemented	Under implementation	Overtaken by events	Not implemented
			into two recommendations in order to better reflect the progress achieved and the work still in progress.					
9	A/70/158, para. 19 (d)	Review the timing and adequacy of funding arrangements for the rationalization of the information and communications technology (ICT) help desks to minimize any risks to the provision of support to Umoja.	Unite Service Desk continues to effectively support Umoja. The Administration requests that four related recommendations (A/70/158, para. 19 (c), (d) and (e); and A/71/180, para. 23 (e)) be reformulated into two recommendations in order to better reflect the progress achieved and the work still in progress.	The Board acknowledges the Administration's response and notes that the response is silent on the recommended action. The Board therefore considers the recommendation not implemented.				X
10	A/70/158, para. 19 (e)	Develop a detailed transition plan for transferring responsibility for technical support of Umoja from the project team to the Office of Information and Communications Technology.	A detailed transition plan is being implemented and is reviewed on a regular basis and revised as necessary. The Administration requests that four related recommendations (A/70/158, para. 19 (c), (d) and (e); and A/71/180, para. 23 (e)) be reformulated into two recommendations in order to better reflect the progress achieved and the work still in progress.	The Board notes the Administration's response and considers the recommended action to be implemented.	X			
11	A/70/158, para. 19 (f)	Refresh the Umoja business case, drawing on the experience of the Department of Field Support and clusters 3 and 4.	A revised benefits case was presented in the eighth progress report of the Secretary-General (A/71/390). The General Assembly has, however, requested a refreshed business case, which is planned to be presented in the next progress report. It is envisaged that the estimation of indirect costs will be addressed in more detail so that the revised benefits case already presented is linked to the total cost of ownership and return on investment in order to present a full business case. The Administration requests that four related recommendations (A/68/151, para. 16; A/70/158, para. 19 (f); and A/71/180, para. 23 (b) and (c)) be reformulated into two recommendations in order to better reflect the progress achieved and the work still in progress.	The Board notes the Administration's response and considers the recommended action to be under implementation.		X		

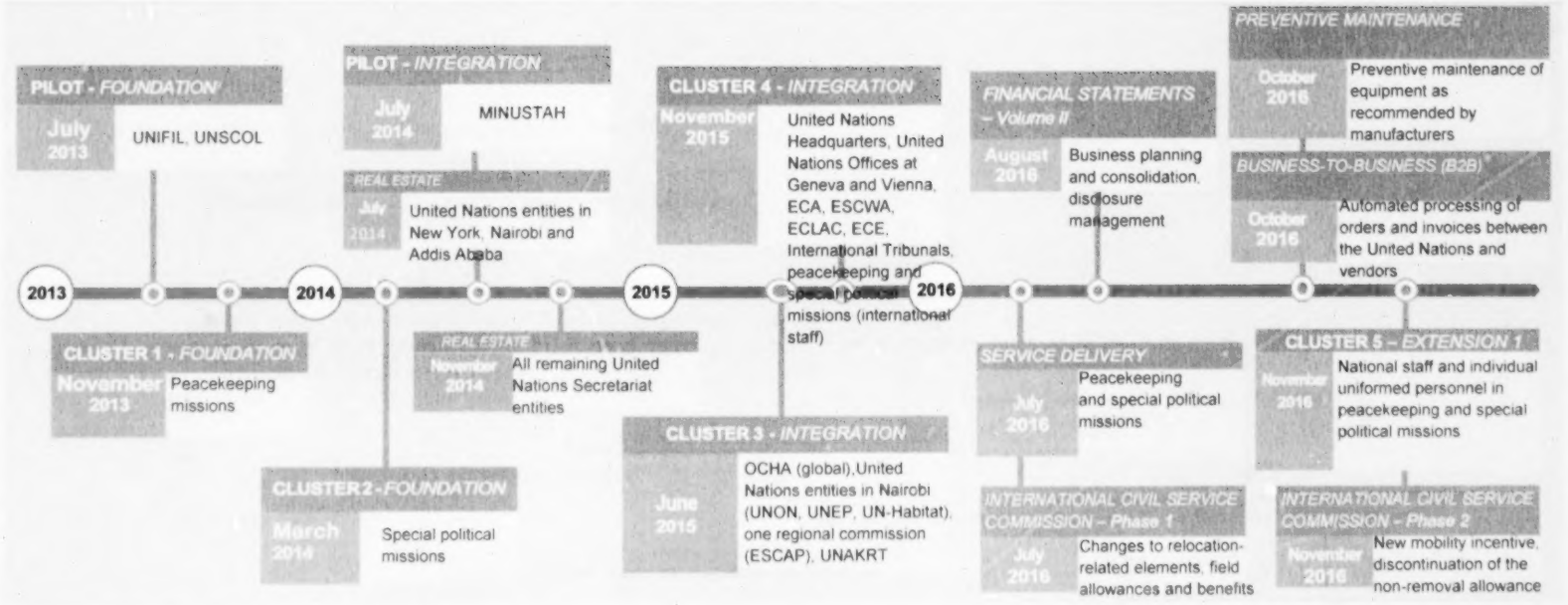
No.	Report reference	Summary of recommendation	Administration comments on status — April 2017	Board comments on status — June 2017	Fully implemented	Under implementation	Overtaken by events	Not implemented
12	A/70/158, para. 19 (g)	Evaluate the case for an Umoja optimization project, considering the links to the proposed global service delivery model and the opportunity it provides to widen business ownership and business leadership of Umoja reforms.	The Administration has evaluated the case for an Umoja optimization project as recommended by the Board and determined that such a project should be implemented in the context of the global service delivery model. The Administration requests that three related recommendations (A/67/164, para. 32; A/68/151, para. 26; and A/70/158, para. 19 (g)) be reformulated into one recommendation that takes into consideration the progress made since 2012 and builds on current improvement initiatives.	The Board notes the Administration's response and considers the recommended action to be implemented.	X			
13	A/69/158, para. 29 (b)	Heads of business units, the process owners and the project team should each provide positive confirmation to the management committee that all enablers necessary for a successful roll-out are in place.	Operational readiness reviews for each deployment of Umoja will continue. Positive confirmation from heads of business units continues to be recognized as an essential part.	The Board notes the Administration's response and considers the recommended action to be implemented.	X			
14	A/69/158, para. 29 (c)	Continue to embed the concept of process ownership by strengthening the partnership with heads of business units.	There is an increasingly active and visible ownership by the process owners. The Department of Field Support took the lead on cluster 5, which was successfully deployed on 1 November 2016. Process owners are designated project managers for Extension 2 subprojects. The Administration requests that this recommendation be closed. The Administration also requests that two related recommendations (A/69/158, para. 29 (c); and A/70/158, para. 19 (a)) be reformulated into one recommendation that takes into account the progress made and to be made.	The Board notes the Administration's response and considers the action under the recommendation to still be under implementation.		X		
15	A/68/151, para. 16	The Board recommends that the Administration design, communicate and implement a plan within each business	This recommendation is in progress. Details of the new benefits case as defined by the five process owners, including an updated assessment of qualitative and quantitative benefits, are	The Board notes the Administration's response and considers the action under the recommendation to still be under implementation.		X		

No.	Report reference	Summary of recommendation	Administration comments on status	April 2017	Board comments on status	June 2017	Fully implemented	Under implementation	Overtaken by events	Not implemented
		area to exploit the defined benefits of up-to-date and consolidated data from the enterprise resource planning system, including how it intends to realize both qualitative and quantitative benefits of improved information.	contained in document A/71/390. The report also contains adjusted quantitative amounts for peacekeeping and the regular budget (of which special political missions are a part). Further details of the methodology applied Organization-wide have been included in the budget guide for the biennium 2018-2019. The Administration requests that four related recommendations (A/68/151, para. 16; A/70/158, para. 19 (f); and A/71/180, para. 23 (b) and (c)) be reformulated into two recommendations in order to better reflect the progress achieved and the work still in progress.							
16	A/68/151, para. 26	The Board recommends that the Administration design a robust methodology which clearly defines: (a) the current status of operational performance in each business unit regarding time, cost, quality; (b) the level of future performance to be achieved post-implementation; (c) the approach and investment involved to achieve the future performance target; and (d) how the benefit achieved will be measured and reported.	This recommendation is in progress. While baseline data are being compiled in the context of the global service delivery model, each business unit will need to be involved, drawing on support from process owners, the Umoja project team and several project teams responsible for other improvement initiatives, such as the global service delivery model, the International Public Sector Accounting Standards, staff mobility, flexible workspace and wider estates management, the global field support strategy and the information and communications technology strategy. The Administration requests that three related recommendations (A/67/164, para. 32; A/68/151, para. 26; and A/70/158, para. 19 (g)) be reformulated into one recommendation that takes into consideration the progress made since 2012 and builds on current improvement initiatives.	The Board notes the Administration's response and considers the action under the recommendation to still be under implementation.			X		
17	A/68/151, para. 81	The Board recommends that the project team prepare an overarching commercial strategy which seeks to: (a) optimize the value from	The implementation of this recommendation is in progress.		The Board notes the response of the Administration and considers the recommendation to be under implementation.			X		

No	Report reference	Summary of recommendation	Administration comments on status — April 2017	Board comments on status — June 2017	Fully implemented	Under implementation	Overtaken by events	Not implemented
		major suppliers to the enterprise resource planning project, balancing cost and risks to delivery; and (b) sets out the parameters against which all future procurements should be undertaken.						
18	A/67/164, para. 32	The Board also recommends that the Administration establish a formal approach to managing and improving business processes to enable continuous reform and improvement following implementation of the enterprise resource planning system.	The Umoja post-implementation review task force provides a forum for business entities, process owners, the Chief Information Technology Officer and the Umoja team to engage on post-deployment issues, identify solutions and agree on closure. Following two multi-day workshops, the issues raised by cluster 3 and 4 entities were harmonized into a set of 67 recommendations. Recommendations are assigned to process owners and the Chief Information Technology Officer, with target resolution dates. Of the 67 recommendations, 13 were categorized as continuous improvements to be addressed over time, and the rest were targeted for closure by the end of 2016. Cluster 5 will be analysed in the second quarter of 2017. This formal mechanism will continue to be employed for future deployments. The Administration requests that this recommendation be closed. The Administration also requests that three related recommendations (A/67/164, para. 32; A/68/151, para. 26; and A/70/158, para. 19 (g)) be reformulated into one recommendation that takes into consideration the progress made since 2012 and builds on current improvement initiatives.	The Board notes the response of the Administration and considers the recommendation to be under implementation.		X		
		Total			**4**	**12**	**–**	**2**
		Percentage			**22**	**67**	**–**	**11**

Annex II

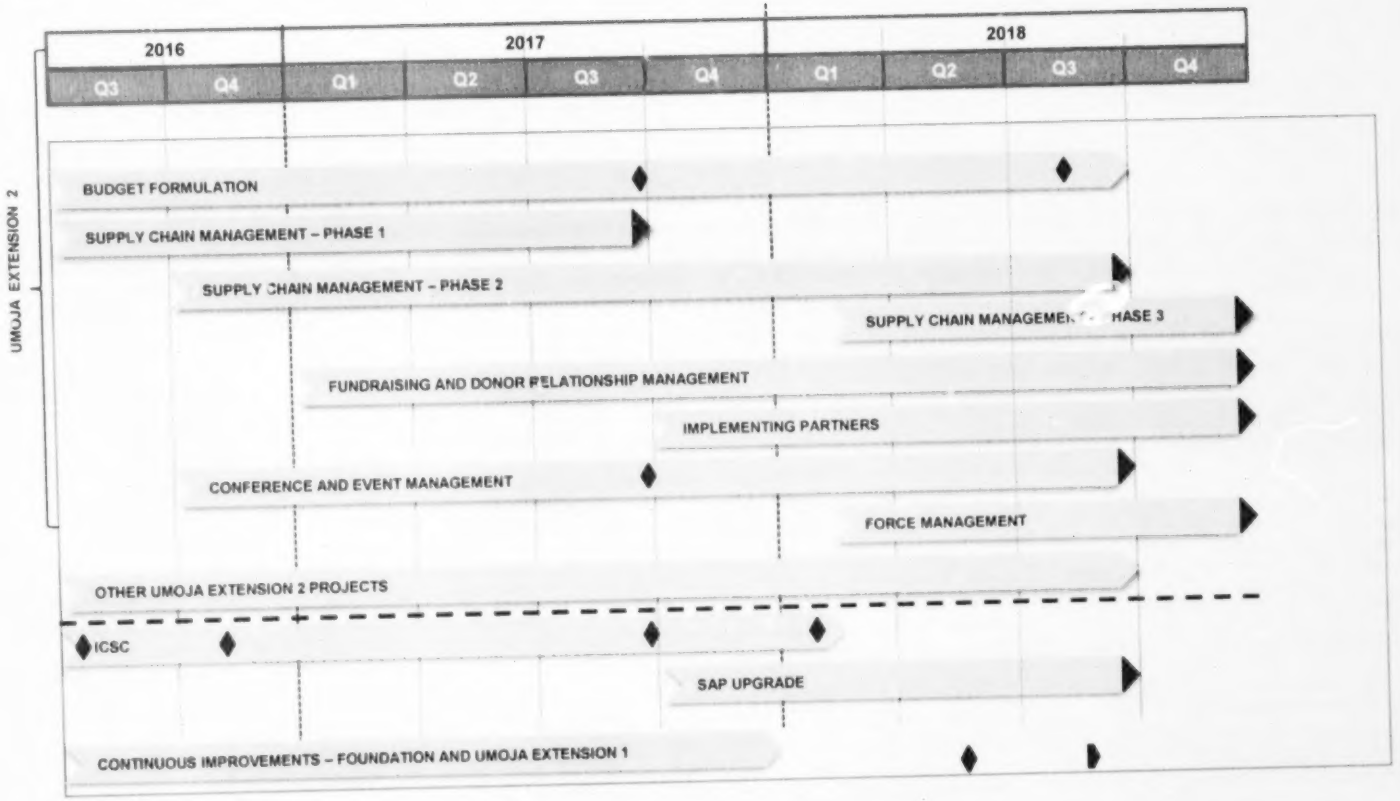
Deployment in 2013-2016


PILOT - FOUNDATION
July 2013
UNIFIL, UNSCOL
PILOT - INTEGRATION
July 2014
MINUSTAH
REAL ESTATE
July 2014
United Nations entities in New York, Nairobi and Addis Ababa
CLUSTER 4 - INTEGRATION
November 2015
United Nations Headquarters, United Nations Offices at Geneva and Vienna, ECA, ESCWA, ECLAC, ECE, International Tribunals, peacekeeping and special political missions (international staff)
FINANCIAL STATEMENTS – Volume II
August 2016
Business planning and consolidation, disclosure management
PREVENTIVE MAINTENANCE
October 2016
Preventive maintenance of equipment as recommended by manufacturers
BUSINESS-TO-BUSINESS (B2B)
October 2016
Automated processing of orders and invoices between the United Nations and vendors
2013
2014
2015
2016
CLUSTER 1 - FOUNDATION
November 2013
Peacekeeping missions
REAL ESTATE
November 2014
All remaining United Nations Secretariat entities
CLUSTER 2 - FOUNDATION
March 2014
Special political missions
CLUSTER 3 - INTEGRATION
June 2015
OCHA (global), United Nations entities in Nairobi (UNON, UNEP, UN-Habitat), one regional commission (ESCAP), UNAKRT
SERVICE DELIVERY
July 2016
Peacekeeping and special political missions
CLUSTER 5 – EXTENSION 1
November 2016
National staff and individual uniformed personnel in peacekeeping and special political missions
INTERNATIONAL CIVIL SERVICE COMMISSION – Phase 1
July 2016
Changes to relocation-related elements, field allowances and benefits
INTERNATIONAL CIVIL SERVICE COMMISSION – Phase 2
November 2016
New mobility incentive, discontinuation of the non-removal allowance

Abbreviations: ECA, Economic Commission for Africa; ECE, Economic Commission for Europe; ECLAC, Economic Commission for Latin America and the Caribbean; ESCAP, Economic and Social Commission for Asia and the Pacific; ESCWA, Economic and Social Commission for Western Asia; MINUSTAH, United Nations Stabilization Mission in Haiti; OCHA, Office for the Coordination of Humanitarian Affairs; UNAKRT, United Nations Assistance to the Khmer Rouge Trials; UNEP, United Nations Environment Programme; UN-Habitat, United Nations Human Settlements Programme; UNIFIL, United Nations Interim Force in Lebanon; UNON, United Nations Office at Nairobi; UNSCOL, Office of the United Nations Special Coordinator for Lebanon.

Annex III

Umoja workplan for 2016-2018



Abbreviation: ICSC, International Civil Service Commission.

Annex IV

Survey on user satisfaction with Umoja

I. Objectives of the survey

1. The audit team intended to assess the views of users on the quality and usefulness of Umoja. To that end, a user satisfaction survey was conducted with the help of the Office of Information and Communications Technology. The survey was originally scheduled from 30 January to 6 February 2017 and was later extended to 12 February 2017.

II. Brief of the survey

2. The survey had a total of 18 questions, some of which had subdivisions. The questions were designed to assess the level of satisfaction of users with Umoja with regard to different aspects, such as access issues, the support received, the level of confidence of users and the effectiveness of the training on Umoja.

III. Number of respondents

3. A total of 6,753 users took the survey. However, some respondents did not answer all the questions, and the number of responses to each question varied. The results of the survey have therefore been collated on the basis of the valid and complete responses received for each question.

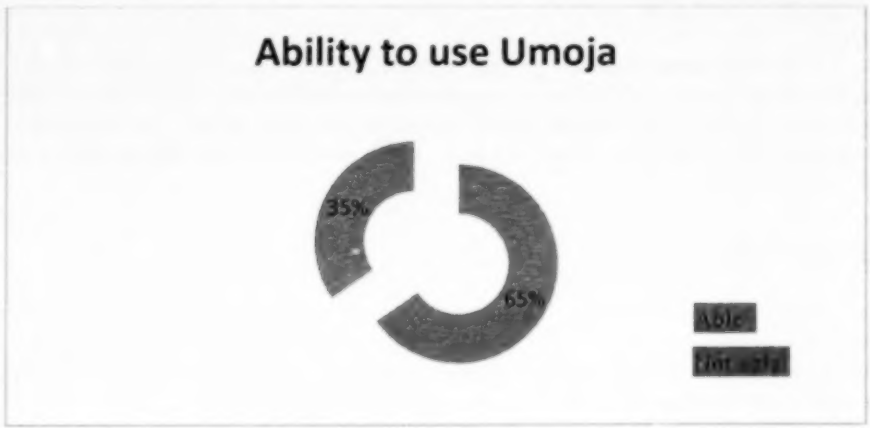
IV. Results of analysis

1. Please rate your level of satisfaction with Umoja.

4. Approximately 29 per cent of the respondents were not at all satisfied with Umoja, while 19 per cent were extremely satisfied.

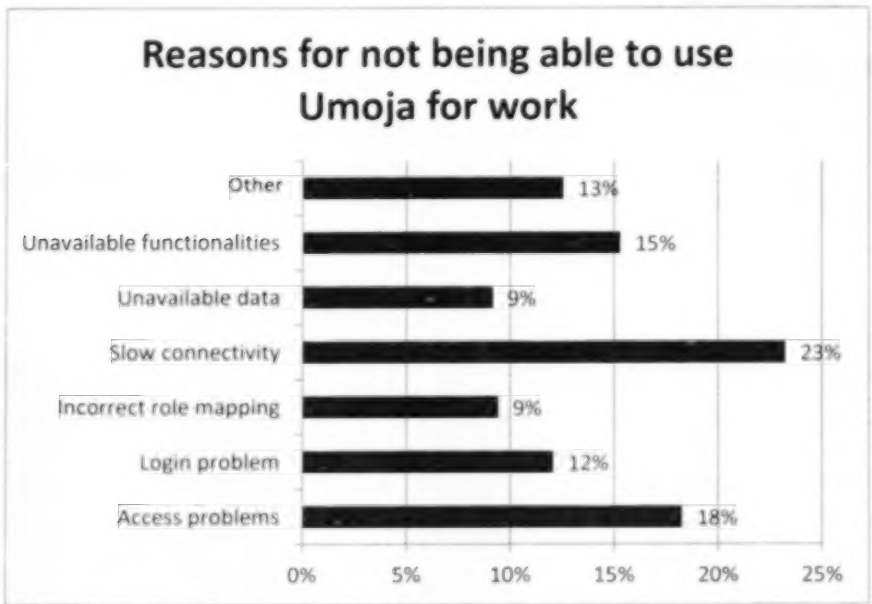
2. Are you able to use Umoja for work when needed?

5. A total of 65 per cent of the respondents reported that they were able to use Umoja for work, while 35 per cent were not able to do so.



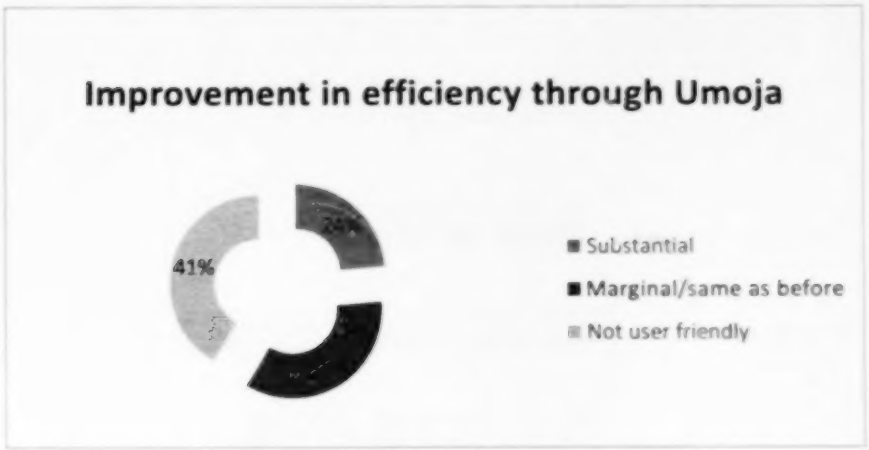
3. Please state the reasons why you are not able to use Umoja for work.

6. The main reason for not being able to use Umoja for work was slow connectivity, which was cited by 23 per cent of the respondents. Access problems were the second most-cited reason, followed by unavailable functionalities.



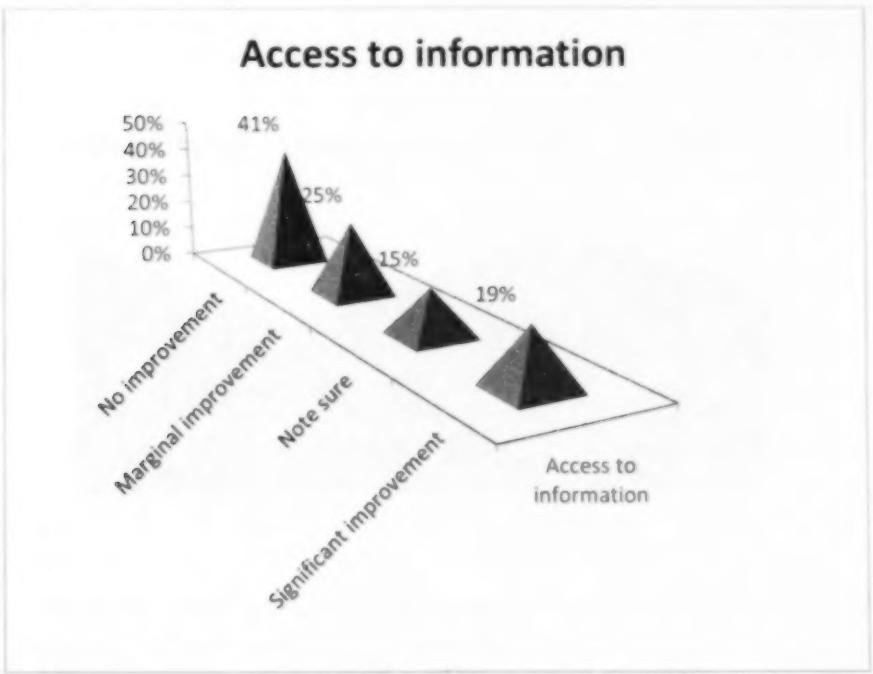
4. How do you rate the new system (Umoja) in terms of increasing your efficiency?

7. A total of 24 per cent of the respondents indicated that there had been substantial improvement in their efficiency, 35 per cent indicated "marginal/same as before" and 41 per cent found Umoja to not be user-friendly.



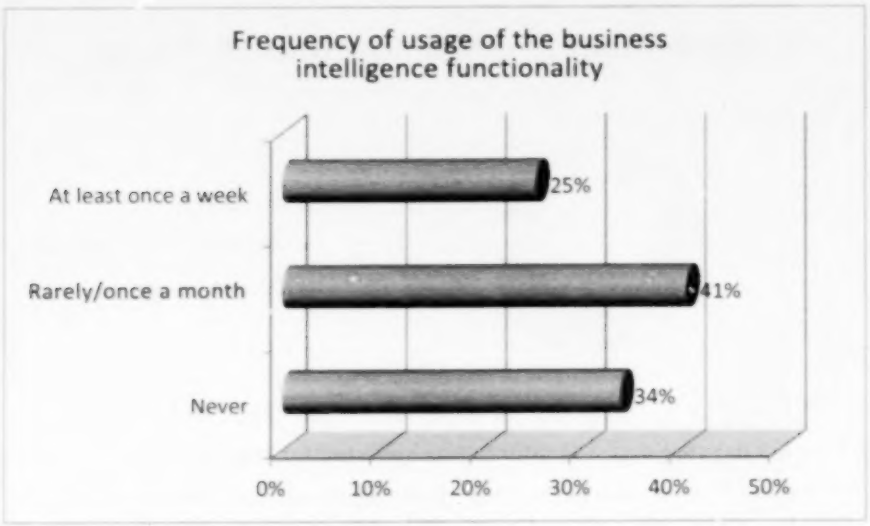
5. Did Umoja improve access to information you need for your work?

8. A total of 19 per cent of the respondents noted significant improvement in the access to information, while 41 per cent indicated that there had been no improvement, 15 per cent were not sure and 25 per cent perceived a marginal improvement.



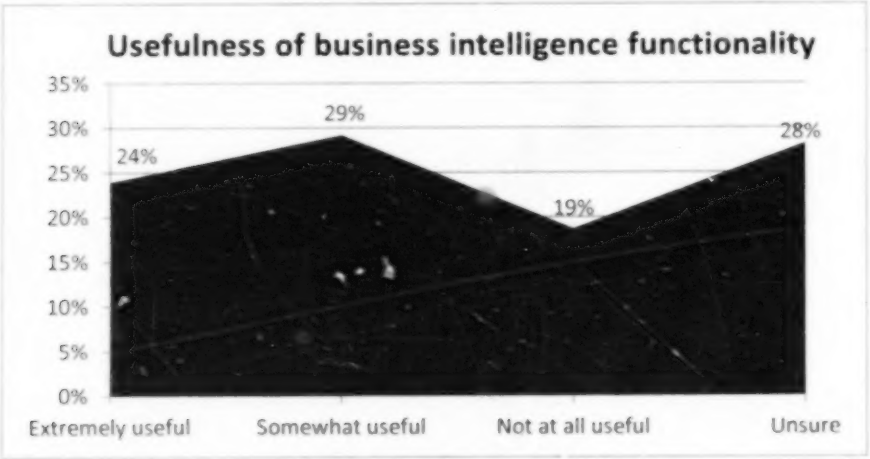
6. **How frequently do you use the business intelligence report functionality in Umoja?**

9. A total of 25 per cent of the respondents reported that they used the business intelligence report functionality at least once a week, 34 per cent never used the functionality and 41 per cent used it rarely or once a month.



7. **How useful do you find the business intelligence functionality?**

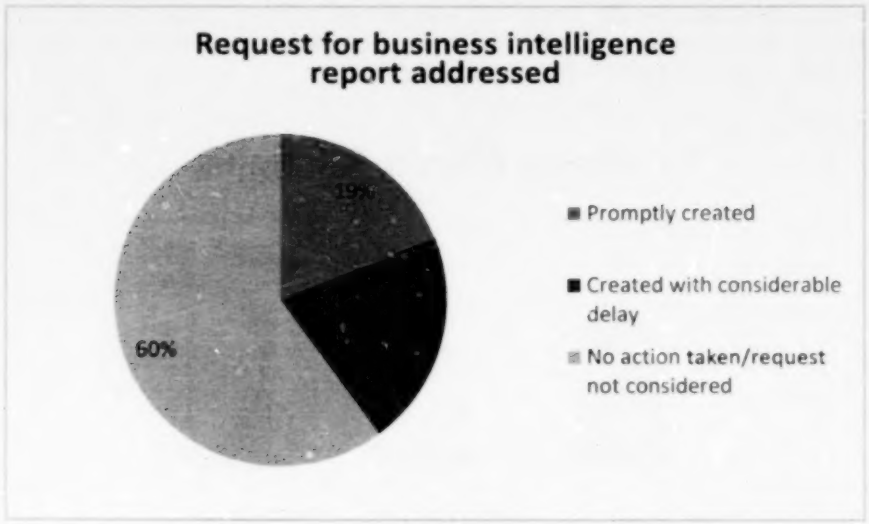
10. A total of 24 per cent of the respondents reported that they found the business intelligence functionality to be extremely useful, 19 per cent found it to be not at all useful, 28 per cent were not sure and 29 per cent found it to be somewhat useful.



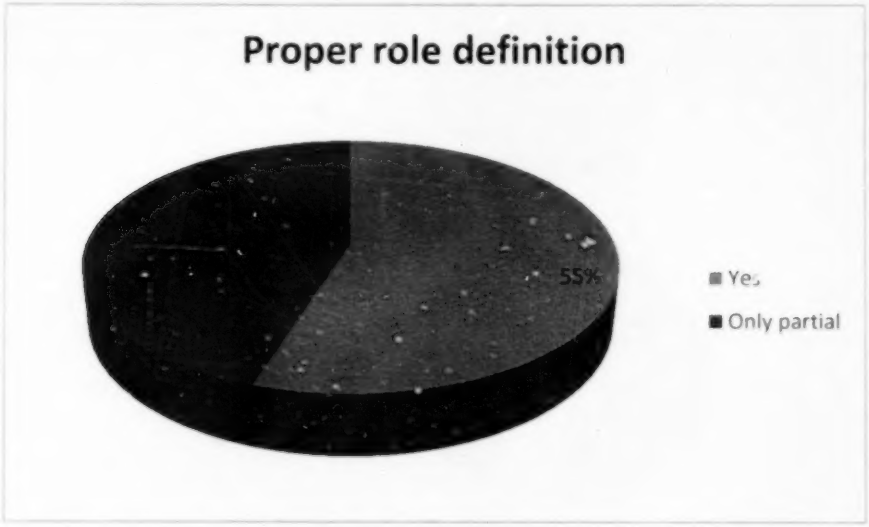
8. **Has your request for additional business intelligence reports been addressed?**

11. A total of 87 per cent of the respondents indicated that they had never requested any additional business intelligence reports. Of the respondents who had requested additional reports, approximately 60 per cent indicated "no action taken/request not considered" in relation to their requests. A total of 21 per cent

indicated that a report had been created with considerable delay and 19 per cent that their requests had been considered and the reports created promptly.



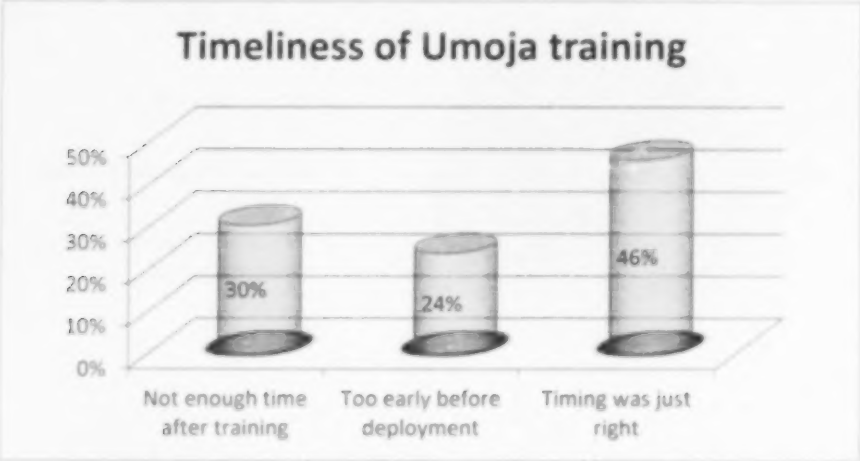
9. **Has your role been properly defined in Umoja, incorporating the delegation of authority required to perform your duty?**



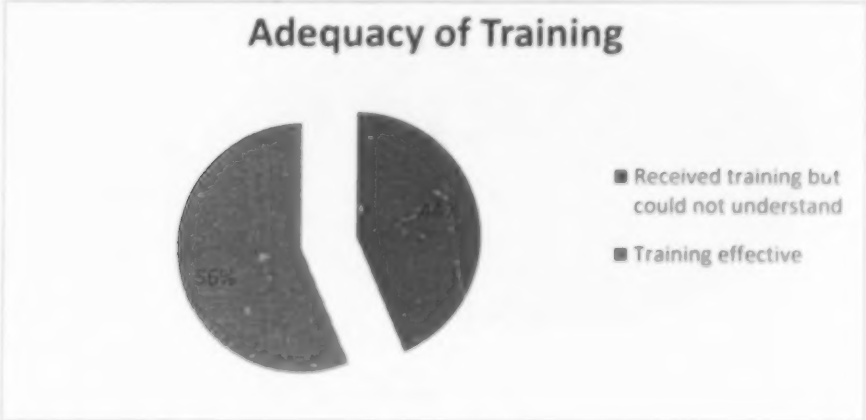
12. While 55 per cent of the respondents indicated that their role had been properly defined, 45 per cent of the respondents stated that their role had been only partially defined.

10. Umoja training

13. On the issue of the timeliness of the Umoja training, 46 per cent of the respondents stated that the timing had been just right, while 30 per cent felt that they had not had enough time after the training and 24 per cent felt that the training had been conducted too early before the deployment.

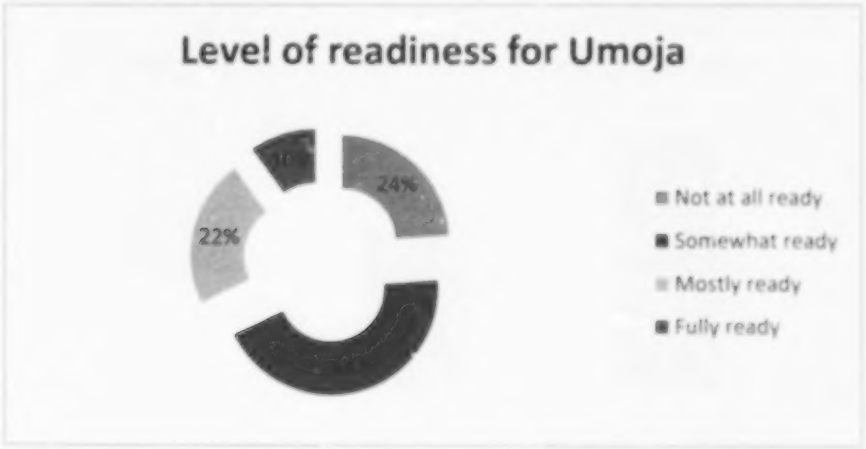


14. On the question of the adequacy of the training to understand Umoja, 44 per cent of the respondents stated that they had received training but could not understand Umoja, while 56 per cent of the respondents rated the training as effective.

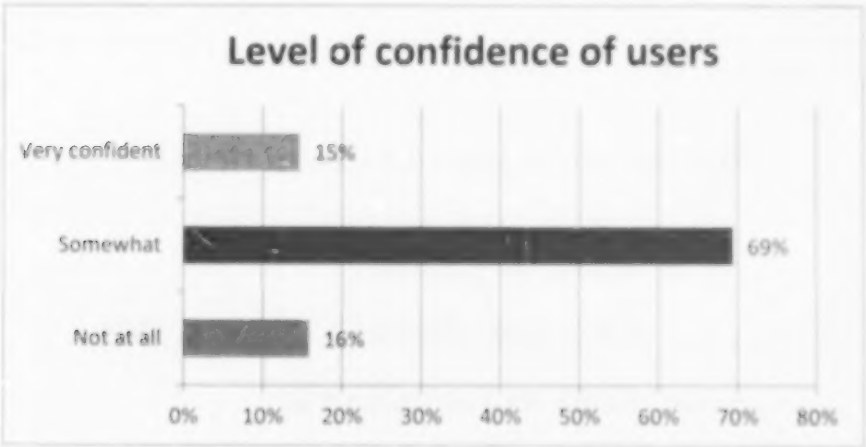


11. Level of readiness

15. The responses to the survey showed that 10 per cent of the respondents felt fully ready and 22 per cent felt mostly ready for Umoja at the time of implementation, while 44 per cent indicated that they were somewhat ready and 24 per cent that they were not at all ready for Umoja at the time of its implementation.

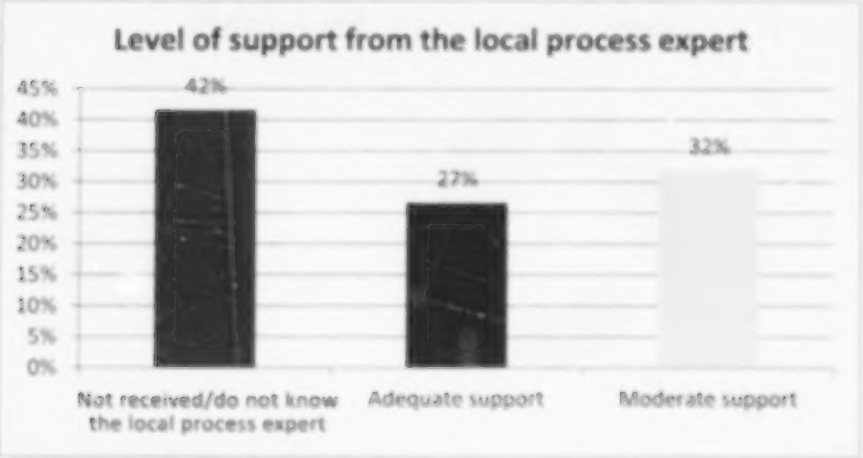


16. A total of 16 per cent of the respondents indicated that they were not at all confident in using Umoja for their work, while 69 per cent felt somewhat confident and 15 per cent felt very confident in using Umoja.



12. Support from local process experts

17. Nearly 42 per cent of the respondents indicated that they had not received any support or did not know the local process expert, while 27 per cent indicated that they had received adequate support and 32 per cent that they had received moderate support from the local process expert.



13. Response to iNeed tickets

18. On the issue of the resolution of iNeed tickets, 19 per cent indicated that their tickets had been resolved within one day and 39 per cent within less than a week, while 26 per cent stated that the tickets had taken more than a week and 16 per cent indicated that they had not been solved at all.